ABBREVIATIONS

ADDL	ADDITIONAL
ADJ	ADJACENT
ALT	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATE
AR	ANCHOR ROD
ARCH	ARCHITECTURAL
B PL	BASE PLATE
B/	BOTTOM OF
BFR	BLENDED FIBER REINFORCING
BLDG	BUILDING
BLKG	BLOCK (ING)
BOT	BOTTOM
BRG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTER LINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECT (ION)
CONST JT	CONSTRUCTION JOINT
CONT	CONTINUOUS OR CONTINUE
CS	COLUMN STRIP
CU YD	CUBIC YARD
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DL	DEAD LOAD
DWG	DRAWING
EA	EACH
EE	EACH END
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
ES	EACH SIDE
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FD	FLOOR DRAIN
FDTN	FOUNDATION
FLR	FLOOR
FP	FULL PENETRATION
FS	FAR SIDE
FT	FOOT/FEET
FTG	FOOTING
GA	GAGE
GALV	GALVANIZED
GB	GRADE BEAM
GC	GENERAL CONTRACTOR
HORIZ	HORIZONTAL
HP	HIGH POINT
HS	HIGH STRENGTH
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
ID	INSIDE DIAMETER
IF	INSIDE FACE
INFO	INFORMATION
INSUL	INSULATED (ION)
INV	INVERT
JT	JOINT
k	KIPS
L	ANGLE
LBS	POUNDS
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW POINT
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LTWT	LIGHT WEIGHT
LW	LONG WAY
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEP	MECHANICAL ELECTRICAL AND PLUMBING
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MS	MIDDLE STRIP
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OPNG	OPENING
PC	PILE CAP
PCC	PRECAST CONCRETE
PCF	POUNDS PER CUBIC FOOT
PEN	PENETRATION
PL	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST TENSION
QTY	QUANTITY
R	RADIUS
RD	ROOF DRAIN
REF	REFERENCE
REINF	REINFORCE (D) (ING)
REQD	REQUIRED
REV	REVISION
RO	ROUGH OPENING
SC	SLIP CRITICAL
SECT	SECTION
SIM	SIMILAR
SJ	SEISMIC JOINT
SOG	SLAB-ON-GRADE
SPEC	SPECIFICATIONS
SQ	SQUARE
SST	STAINLESS STEEL
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
SSMF	STEEL SPECIAL MOMENT FRAME
STRUCT	STRUCTURAL
SW	SHORT WAY
SYMM	SYMMETRICAL
T/	TOP OF
T&B	TOP AND BOTTOM
THK	THICK (NESS)
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W	WIDE FLANGE SECTION
W/	WITH
W/O	WITHOUT
WD	WOOD
WP	WORK POINT
WT	TEE SECTION
WWF	WELDED WIRE FABRIC

FOUNDATION NOTES

F1
REFER TO DIVISION 31 SPECIFICATION SECTIONS FOR REQUIREMENTS IN ADDITION TO THOSE LISTED BELOW.

F2
NOTE REQUIREMENTS ON PLANS AND IN SPECIFICATIONS FOR UNDERPINNING AND PROTECTION OF EXISTING STRUCTURES. DO NOT UNDERMINE EXISTING CONSTRUCTION.

F3
BEAR FOOTINGS ON AGGREGATE PIERS HAVING A MINIMUM NET ALLOWABLE BEARING CAPACITY OF 4,000 POUNDS PER SQUARE FOOT FOR CONTINUOUS STRIP FOOTINGS AND 5,000 POUNDS PER SQUARE FOOT FOR INDIVIDUAL FOOTINGS. EXTEND EXTERIOR CONSTRUCTION DOWN A MINIMUM OF 2'-6" FEET BELOW EXTERIOR GRADE. ELEVATIONS GIVEN ARE MINIMUM DEPTHS.

F4
THE FOUNDATIONS HAVE BEEN DESIGNED TO THE REQUIREMENTS SET FORTH IN THE GEOTECHNICAL REPORT PREPARED BY GATEWAY GEOTECHNICAL, LLC DATED APRIL 2014, PROJECT NUMBER 1007171.

F5
THE SUBSURFACE CONDITIONS DESCRIBED IN THE GEOTECHNICAL REPORT REPRESENT CONDITIONS ONLY AT THOSE SPECIFIC LOCATIONS AT THE PARTICULAR TIME THEY WERE MADE. SUBSURFACE CONDITIONS DESCRIBED ON THE DRAWINGS SHALL BE CONSIDERED APPROXIMATE.

F6
REMOVE ORGANIC AND UNSUITABLE MATERIAL, AS DETERMINED BY THE CONTRACTOR'S GEOTECHNICAL CONSULTANT, PRIOR TO PLACING FILL AND REPLACE W/ ENGINEERED FILL. PLACE FILL IN HORIZONTAL LAYERS WITHIN +/- 2 PERCENT OF OPTIMUM MOISTURE CONTENT. USE FILL LAYER THICKNESS APPROPRIATE FOR THE DEGREE OF FILL COHESIVENESS AND COMPACTION ENERGY IMPARTED TO THE LIFT. COMPACT TO SPECIFIED DENSITY REQUIREMENTS. IF ACCEPTABLE TO THE CONTRACTOR'S GEOTECHNICAL CONSULTANT, ON-SITE MATERIALS THAT MEET PROJECT SPECIFICATIONS MAY BE USED FOR ENGINEERED FILL IF MAINTAINED AT OPTIMUM MOISTURE CONTENT AND COMPACTED TO THE ABOVE CRITERIA. SELECT BORROW MATERIALS SHALL BE REQUIRED WHEN ON-SITE MATERIALS ARE UNSUITABLE OR CANNOT BE COMPACTED TO THE CRITERIA STATED ABOVE.

F7
EXCAVATION TO SUITABLE BEARING SUBGRADES MAY PROCEED BY CONVENTIONAL METHODS TO WITHIN 2.5 FEET OF THE PROPOSED FINAL SUBGRADES. PERFORM EXCAVATION TO FINAL SUBGRADE USING A BACKHOE EQUIPPED WITH A SMOOTH BLADE TO MINIMIZE DISTURBANCE OF THE BEARING SUBGRADE. FINISH FOOTING EXCAVATIONS BY HAND.

F8
DO NOT EXTEND THE GENERAL EXCAVATION ACROSS THE SITE DEEPER THAN 1'-0" BELOW THE SLAB-ON-GRADE SUBGRADE ELEVATION. PERFORM THE EXCAVATIONS FOR GRADE BEAMS, SPREAD FOOTINGS, PITS, ETC ON AN INDIVIDUAL, LOCALIZED BASIS DOWN FROM THE SLAB-ON-GRADE SUBGRADE ELEVATION.

F9
PROVIDE POSITIVE PROTECTION FOR EXCAVATION SLOPES AGAINST INSTABILITY AND DETERIORATION DUE TO RAIN, WIND, SNOW OR ICE.

F10
RETAIN THE PERIMETER OF THE GENERAL EXCAVATION WITH A SOIL RETENTION SYSTEM AS NECESSARY. THE DESIGN, INSTALLATION, MAINTENANCE AND REMOVAL OF THE SYSTEM IS THE RESPONSIBILITY OF THE CONTRACTOR. PROVIDE APPROPRIATE MEASURES AND PRECAUTIONS NECESSARY TO MINIMIZE SETTLEMENT OF EXISTING OR NEW CONSTRUCTION INSIDE OR OUTSIDE OF THE PROJECT LIMITS. REPAIR DAMAGE TO NEW OR EXISTING CONSTRUCTION INSIDE OR OUTSIDE PROJECT LIMITS CAUSED BY CONSTRUCTION TECHNIQUES OR MOVEMENTS OF THE SOIL RETENTION SYSTEM.

F11
THE EXPOSED SUBGRADE SOILS MAY BE SENSITIVE TO DISTURBANCE AND STRENGTH DEGRADATION WHEN HIGH MOISTURE CONTENTS ARE PRESENT. MINIMIZE CONSTRUCTION TRAFFIC OVER EXPOSED SUBGRADES. DO NOT POND WATER ON THE SUBGRADES. CONTROL SURFACE AND GROUND WATER BY PROPER SITE GRADING, PERIMETER CUTOFF TRENCHES, AND SUMP AND PUMP METHODS OF DEWATERING. CONSTRUCT CUTOFF TRENCHES AND SUMPS OUTSIDE THE INFLUENCE OF PROPOSED FOUNDATIONS.

F12
THE CONTRACTOR'S GEOTECHNICAL CONSULTANT MUST REVIEW AND APPROVE FINISHED EXCAVATIONS AND BEARING SUBGRADES BEFORE PLACING CONCRETE. PROVIDE ADDITIONAL EXCAVATION AS NECESSARY TO ACHIEVE THE REQUIRED BEARING CAPACITY.

F13
USE SIDE FORMS FOR FOOTINGS AND GRADE BEAMS. CLEAN REINFORCEMENT IMMEDIATELY PRIOR TO PLACING CONCRETE.

F14
DO NOT PLACE CONCRETE IN AN EXCAVATION CONTAINING FREE WATER, FROST, ICE OR FROZEN GROUND. PROVIDE NECESSARY MEASURES TO PREVENT FROST OR ICE FROM PENETRATING FOOTING OR SLAB SUBGRADE, BOTH BEFORE AND AFTER CONCRETE PLACEMENT AND UNTIL SUBGRADES ARE FULLY PROTECTED BY THE PERMANENT BUILDING STRUCTURE.

F15
PLACE THE CONCRETE FOR EACH FOOTING IN ONE CONTINUOUS POUR. LIMIT BASEMENT WALL POUR LENGTHS TO 65 FEET.

F16
DO NOT BACKFILL AGAINST BASEMENT FOUNDATION WALLS UNTIL THE WALLS HAVE BEEN PLACED AND THE CONCRETE HAS ATTAINED FULL DESIGN STRENGTH.

STRUCTURAL CONCRETE NOTES

C1
REFER TO DIVISION 03 SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO THOSE LISTED BELOW.

C2
A QUALITY CONTROL PROGRAM OF FIELD TESTING AND INSPECTION SHALL BE PERFORMED ON STRUCTURAL CONCRETE WORK IN ACCORDANCE WITH THE SPECIFICATIONS. SCHEDULE WORK AND PROVIDE ACCESS TO ALLOW THE TESTING REQUIREMENTS TO BE COMPLETED. PROVIDE ADEQUATE NOTICE TO ALLOW THE CONTRACTOR'S TESTING AGENCY TO REVIEW PLACEMENT OF REINFORCEMENT PRIOR TO PLACING CONCRETE.

C3
SUBMIT ENGINEERED CONCRETE MIX DESIGNS, INCLUDING REQUIRED BACKUP DATA, FOR EACH TYPE OF CONCRETE PROPOSED FOR USE TO THE ARCHITECT/ ENGINEER FOR REVIEW. ALLOW ADEQUATE TIME FOR REVIEW PRIOR TO PERFORMING CONCRETE WORK.

C4
DETAIL, FABRICATE, LABEL, SUPPORT AND PLACE CONCRETE REINFORCEMENT IN ACCORDANCE WITH ACI 315 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" AND ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", LATEST EDITIONS.

C5
SUBMIT DETAILED SHOP DRAWINGS INDICATING REINFORCEMENT SIZE, SPACING AND PLACEMENT TO THE ARCHITECT/ENGINEER FOR REVIEW PRIOR TO FABRICATION. INCLUDE DETAILS AND LOCATIONS OF CURBS, CONSTRUCTION JOINTS, SLAB DEPRESSIONS, SLEEVES, OPENINGS, ETC.

C6
SAWCUT SLABS ON GRADE IN THE PATTERN SHOWN ON PLAN. START SAWCUTTING AS SOON AS THE SAW WILL NOT RAVEL EDGES OR DISLODGE AGGREGATE, BUT IN NO CASE MORE THAN 12 HOURS AFTER THE SLAB IS PLACED.

C7
COORDINATE LOCATION OF CONSTRUCTION JOINTS WITH ENGINEER PRIOR TO COMMENCEMENT OF CONCRETE WORK.

C8
CLEAN AND MOISTEN CONSTRUCTION JOINTS IMMEDIATELY PRIOR TO PLACING FRESH CONCRETE.

C9
COORDINATE THE LOCATION OF INSERTS, EMBEDDED PLATES, ANCHORS, REGLETS AND SIMILAR ITEMS REQUIRED BY OTHER TRADES TO BE PLACED IN CONCRETE. MAINTAIN CORRECT LOCATION OF REINFORCING BARS WHEN PLACING THESE ITEMS.

C10
UNLESS NOTED OTHERWISE, PROVIDE DOWELS TO MATCH MAIN REINFORCEMENT SIZE AND SPACING. PROVIDE TENSION LAP SPLICE UNLESS NOTED OTHERWISE.

C11
DO NOT USE CALCIUM CHLORIDE IN CONCRETE.

C12
REFER TO THE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR CURBS, PADS, DEPRESSIONS, WALL/SLAB OPENINGS, SPECIAL FLOOR FINISHES, ETC.

C13
PROVIDE AIR-ENTRAINING IN CONCRETE AS SET FORTH IN THE SPECIFICATIONS.

C14
PROVIDE ONLY THOSE OPENINGS INDICATED ON THE REVIEWED SHOP DRAWINGS.

C15
REFER TO ACI 318, CHAPTER 7.7 FOR MINIMUM CONCRETE COVER REQUIREMENTS, UNO.

C16
REFER TO ACI 305 FOR REQUIREMENTS FOR PLACING CONCRETE IN HOT WEATHER AND TO ACI 306 FOR REQUIREMENTS FOR PLACING CONCRETE IN COLD WEATHER.

C17
ON STEEL FRAMED FLOORS, PROVIDE ADDITIONAL CONCRETE AS NECESSARY TO FINISH THE FLOORS TO WITHIN SPECIFIED TOLERANCES WHILE ACCOUNTING FOR STEEL DECK AND STEEL BEAM DEFLECTIONS. ALLOW FOR AN AVERAGE OF AT LEAST 1/2 INCH OF ADDITIONAL CONCRETE FOR EACH FLOOR.

C18
PROVIDE ONLY CONCRETE AND REINFORCING MATERIALS OF THE TYPES AND GRADES LISTED IN THE TABLE BELOW, UNLESS NOTED OTHERWISE.

CONCRETE	**F'C (PSI)**	**UNIT WEIGHT (PCF)**
FOOTINGS	4500	145
FOUNDATION WALLS	4500	145
SHEAR WALL RETROFIT	SEE SHEAR WALL ELEVATION	145
SLABS-ON-GRADE	3000	145
SLABS-ON-STEEL DECK	SEE COMPOSITE FLOOR DECK SCHEDULE	
ALL OTHER CONCRETE	4500	145

REINFORCING	**GRADE**
TYPICAL BARS	ASTM A-615, GRADE 60
WELDED BARS	ASTM A-706, GRADE 60
WELDED WIRE FABRIC	ASTM A-185

STRUCTURAL MASONRY NOTES

CM1
REFER TO DIVISION 04 SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO THOSE LISTED BELOW.

CM2
COMPLY WITH THE REQUIREMENTS OF THE AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES", (ACI 530) AND "SPECIFICATIONS FOR MASONRY STRUCTURES" (ACI 530.1), LATEST EDITIONS.

CM3
PROVIDE A CONCRETE MASONRY SYSTEM WITH A MINIMUM NET AREA COMPRESSIVE STRENGTH (f'm) OF 1500 PSI AT 28 DAYS.

CM4
PROVIDE MASONRY MATERIALS OF THE TYPE AND STRENGTH SPECIFIED BELOW:

HOLLOW CONCRETE MASONRY UNITS: CONFORM TO ASTM C90, GRADE N TYPE 1. PROVIDE UNITS WITH A MINIMUM NET AREA COMPRESSIVE STRENGTH OF 1900 PSI.

SOLID BRICK MASONRY UNITS WITH MINIMUM NET AREA COMPRESSIVE STRENGTH OF 5500 PSI.

PROVIDE GROUT FOR REINFORCED MASONRY IN ACCORDANCE WITH ASTM C476 WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI.

PROVIDE TYPE S MORTAR FOR REINFORCED MASONRY IN ACCORDANCE WITH ASTM C270.

CM5
PROVIDE REINFORCING BARS CONFORMING TO ASTM A615, GRADE 60. PROVIDE CONTINUOUS 9 GAUGE TRUSS TYPE HORIZONTAL JOINT REINFORCEMENT AT 16" VERTICAL SPACING TYPICALLY AND 8" VERTICAL SPACING IN PARAPETS.

CM6
USE PREFABRICATED "L" AND "T" HORIZONTAL JOINT REINFORCEMENT AT WALL INTERSECTIONS.

CM7
PROTECT CONCRETE MASONRY UNITS FROM ABSORBING MOISTURE AND WATER WHILE AT THE PLANT, DURING SHIPMENT, AND AT THE SITE DURING CONSTRUCTION

CM8
LAY MASONRY UNITS WITH FULL MORTAR COVERAGE AT HEAD AND BED JOINTS OF FACE SHELLS AND AT WEBS ADJACENT TO CELLS FILLED WITH GROUT, IN THE STARTING COURSE ON FOOTINGS, SOLID FOUNDATION WALLS, AND PIERS, PILASTERS AND COLUMNS.

CM9
ALIGN VERTICAL CELLS TO BE FILLED WITH GROUT TO PROVIDE A CONTINUOUS, UNOBSTRUCTED OPENING OF THE DIMENSIONS SHOWN ON THE DRAWINGS. PROVIDE A MINIMUM CLEAR OPENING AS SPECIFIED IN CELLS THAT CONTAIN REINFORCEMENT. USE CLEAN OUT HOLES WHERE NECESSARY TO OBTAIN UNOBSTRUCTED VERTICAL CELLS.

CM10
GROUT SOLID CELLS CONTAINING REINFORCING BARS, ANCHOR RODS OR HARDWARE. CONSOLIDATE GROUT IN PLACE BY VIBRATION TO INSURE COMPLETE FILLING OF THE CELLS. LIMIT HEIGHT OF GROUT PLACEMENTS TO FOUR (4) FOOT LIFTS UNLESS SPECIFIC HIGH LIFT GROUTING PROCEDURES ARE FOLLOWED.

CM11
PROVIDE ADEQUATE TEMPORARY BRACING DURING CONSTRUCTION TO WITHSTAND LATERAL LOADS AND THE PRESSURES OF THE FLUID GROUT.

CM12
TAKE NECESSARY PRECAUTIONS FOR MIXING AND PLACING MORTAR AND GROUT IN EITHER HOT OR COLD WEATHER, AS SET FORTH IN THE ACI "MASONRY STRUCTURE BUILDING CODE COMMENTARY".

CM13
PLACE POINTS OF BEARING ON TWO (2) COURSES OF HOLLOW MASONRY GROUTED SOLID OR TWO COURSES OF SOLID MASONRY.

CM14
SUPPORT SLABS AND PORTIONS OF WALLS REMAINING ABOVE NEW OPENINGS UNTIL PERMANENT SUPPORT SYSTEMS ARE INSTALLED AND HAVE BECOME EFFECTIVE.

CM15
USE MASONRY SAWS TO CUT AND FIT MASONRY, INCLUDING THAT PORTION REQUIRED TO ACCOMMODATE THE WORK OF OTHER TRADES.

CM16
BUILD CHASES INTO WALL, DO NOT CUT IN. PLUMB CHASES AND PROVIDE ONE (1) FULL MASONRY UNIT LENGTH FROM JAMBS OF OPENINGS. DO NOT CONSTRUCT CHASES OTHER THAN THOSE SHOWN ON THE DRAWINGS WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER.

CM17
TOOTH AND PATCH IN NEW MASONRY THAT INTERFACES WITH EXISTING MASONRY CONSTRUCTION. TOOTH EVERY OTHER COURSE AND PROVIDE A MINIMUM DEPTH OF THE TOOTH EQUAL TO 1/2 THE LENGTH OF THE NEW OR EXISTING MATERIAL, WHICHEVER IS LONGER.

CM18
INSTALL ANCHORS, WALL PLUGS, ACCESSORIES AND OTHER ITEMS THAT ARE REQUIRED TO BE BUILT INTO THE WORK AS THE MASONRY WORK PROGRESSES. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL DETAILS.

CM19
PROVIDE A MINIMUM OF ONE #5 BAR AROUND OPENINGS IN MASONRY CONSTRUCTION. EXTEND HORIZONTAL BARS A MINIMUM OF 24 INCHES BEYOND THE CORNER OF THE OPENING. EXTEND VERTICAL BARS TO THE TOP AND BOTTOM OF THE WALL.

CM20
BRACE THE TOPS OF WALLS TO THE STRUCTURE FOR LATERAL STABILITY.

STRUCTURAL STEEL NOTES

S1
REFER TO DIVISION 05 SPECIFICATION SECTION - STRUCTURAL STEEL - FOR REQUIREMENTS IN ADDITION TO THOSE LISTED BELOW.

S2
A QUALITY CONTROL PROGRAM OF SHOP AND FIELD TESTING AND INSPECTION SHALL BE PERFORMED ON STRUCTURAL STEEL FABRICATION, ERECTION, AND CONNECTIONS IN ACCORDANCE WITH THE SPECIFICATIONS. SCHEDULE WORK AND PROVIDE ACCESS TO ALLOW THE TESTING REQUIREMENTS TO BE COMPLETED.

S3
DETAIL, FABRICATE AND ERECT STRUCTURAL STEEL IN CONFORMANCE WITH THE AISC SPECIFICATIONS AND CODES, LATEST EDITIONS.

S4
PERFORM WELDING USING CERTIFIED WELDERS AND IN ACCORDANCE WITH THE AWS "STRUCTURAL WELDING CODE - STEEL", LATEST EDITION. COMPLY WITH AISC SPECIFICATION FOR MINIMUM FILLET WELD SIZES, BUT DO NOT USE LESS THAN A 1/4 INCH FILLET UNLESS SPECIFICALLY NOTED ON THE DRAWINGS.

S5
ALL WELDS USED IN MEMBERS AND CONNECTIONS IN THE SEISMIC FORCE RESISTING SYSTEM SHALL BE MADE WITH FILLER METALS MEETING THE REQUIREMENTS SPECIFIED IN CLAUSE 6.3 OF STRUCTURAL WELDING CODE-SEISMIC SUPPLEMENT (AWS D1.8/D1.8M).

S6
FOR STRUCTURAL STEEL IN THE SEISMIC FORCE RESISTING SYSTEM, HOT ROLLED SHAPES WITH FLANGES 1 1/2" THICK (38mm) AND THICKER SHALL HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LB (27J) AT 70°F (21°C), TESTED IN THE ALTERNATE CORE LOCATION AS DESCRIBED IN ASTM A6 SUPPLEMENTARY REQUIREMENT S30. PLATES 2" (50mm) THICK AND THICKER SHALL HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LB (27J) AT 70°F (21°C), MEASURED AT ANY LOCATIONS PERMITTED BY ASTM A673, FREQUENCY P, WHERE THE PLATE IS USED FOR THE FOLLOWING:

a. MEMBERS BUILT UP FROM PLATE.
b. CONNECTION PLATES WHERE INELASTIC STRAIN UNDER SEISMIC LOADING IS EXPECTED.

S7
SUBMIT ENGINEERED AND CHECKED SHOP DRAWINGS TO THE ARCHITECT/ ENGINEER FOR REVIEW. SHOW SHOP FABRICATION DETAILS, FIELD ASSEMBLY DETAILS, AND ERECTION DIAGRAMS FOR STRUCTURAL STEEL. SCHEDULE SUBMISSIONS TO ALLOW ADEQUATE TIME FOR REVIEW PRIOR TO FABRICATION.

S8
THE CONNECTION DETAILS SHOWN ON THE DRAWINGS ARE CONCEPTUAL AND DO NOT INDICATE THE REQUIRED COMPONENT SIZES, WELD SIZES OR DIMENSIONS UNLESS SPECIFICALLY NOTED. FINAL DESIGN AND DETAILING IS THE RESPONSIBILITY OF THE FABRICATOR. PERFORM DESIGN USING INDUSTRY STANDARDS AND CRITERIA SET FORTH IN THE CONTRACT DOCUMENTS. SUBMIT DESIGN CALCULATIONS PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MISSOURI.

STRUCTURAL STEEL NOTES CONTINUED

S9
DESIGN MOMENT CONNECTIONS TO DEVELOP THE FULL FACTORED ELASTIC MOMENT CAPACITY OF THE BEAM UNLESS OTHER CRITERIA ARE NOTED ON THE DRAWINGS.

S10
DESIGN SIMPLE SHEAR CONNECTIONS CAPABLE OF END ROTATION UTILIZING HIGH STRENGTH BOLTS IN BEARING.

S11
USE BOLTED JOINTS IN FIELD CONNECTIONS WHENEVER POSSIBLE, UNLESS WELDED JOINTS ARE DETAILED.

S12
BOLTS OF DIFFERING STEEL GRADES (A325, A490, ETC) MUST VARY IN BOLT DIAMETER BY AT LEAST 1/4 INCH.

S13
PROVIDE A MINIMUM OF TWO (2) BOLTS AT EACH FAYING SURFACE.

S14
DETAIL BEAMS FRAMING INTO BEAMS OR COLUMNS TO ALLOW FOR HORIZONTAL FIELD TOLERANCES AND THERMAL MOVEMENT. PROVIDE CONNECTION DETAILS REQUIRED BY THE SPECIFIC CONSTRUCTION SEQUENCES. USE ONLY SINGLE SHEAR PLATE NOT ANGLES AT BEAM TO BEAM CONNECTION.

S15
COMPLETELY FILL COLUMN POCKETS WITH CONCRETE.

S16
FABRICATE BEAMS WITH THE NATURAL CAMBER UP. PROVIDE ADDITIONAL CAMBER SHOWN ON THE DRAWINGS.

S17
THE USE OF BLEED THROUGH MARKERS IS PROHIBITED ON STEEL THAT WILL BE EXPOSED TO VIEW IN THE FINISHED WORK.

S18
AFTER FABRICATION, CLEAN STEEL OF RUST, LOOSE MILL SCALE, DIRT, OIL, GREASE OR OTHER FOREIGN MATERIALS.

S19
REFER TO THE ARCHITECTURAL DRAWINGS FOR THE REQUIRED FIRE RATINGS AND UL ASSEMBLY NUMBERS.

S20
DO NOT FIELD CUT STRUCTURAL STEEL UNLESS REVIEWED AND APPROVED BY THE ARCHITECT/ENGINEER IN WRITING. CLEARLY INDICATE STEEL MEMBER OPENINGS REQUIRED ON THE SHOP DRAWINGS. ALL COSTS FOR PROVIDING PENETRATIONS IN THE FIELD, INCLUDING MEMBER REINFORCING, IS THE RESPONSIBILITY OF THE CONTRACTOR.

S21
ERECTION PROCEDURES, SEQUENCES AND COORDINATION OF WORK WITH OTHER TRADES IS THE RESPONSIBILITY OF THE CONTRACTOR. PROVIDE ADDITIONAL STEEL REQUIRED FOR ERECTION PURPOSES AT NO COST TO THE OWNER. REMOVE THIS ADDITIONAL STEEL UNLESS DIRECTED OTHERWISE BY THE OWNER IN WRITING.

S22
PROVIDE TEMPORARY BRACING AND SHORING AS REQUIRED FOR THE SAFETY, STABILITY AND ALIGNMENT OF THE STRUCTURE. LEAVE TEMPORARY BRACING IN PLACE UNTIL THE PERMANENT STRUCTURAL LATERAL LOAD RESISTING SYSTEM IS COMPLETE, INCLUDING FLOOR AND ROOF DIAPHRAGMS. PERFORM FINAL BOLTING AND WELDING ONLY ON THOSE PORTIONS OF THE STRUCTURE THAT HAVE BEEN ALIGNED AND PLUMBED WITHIN THE SPECIFIED TOLERANCES.

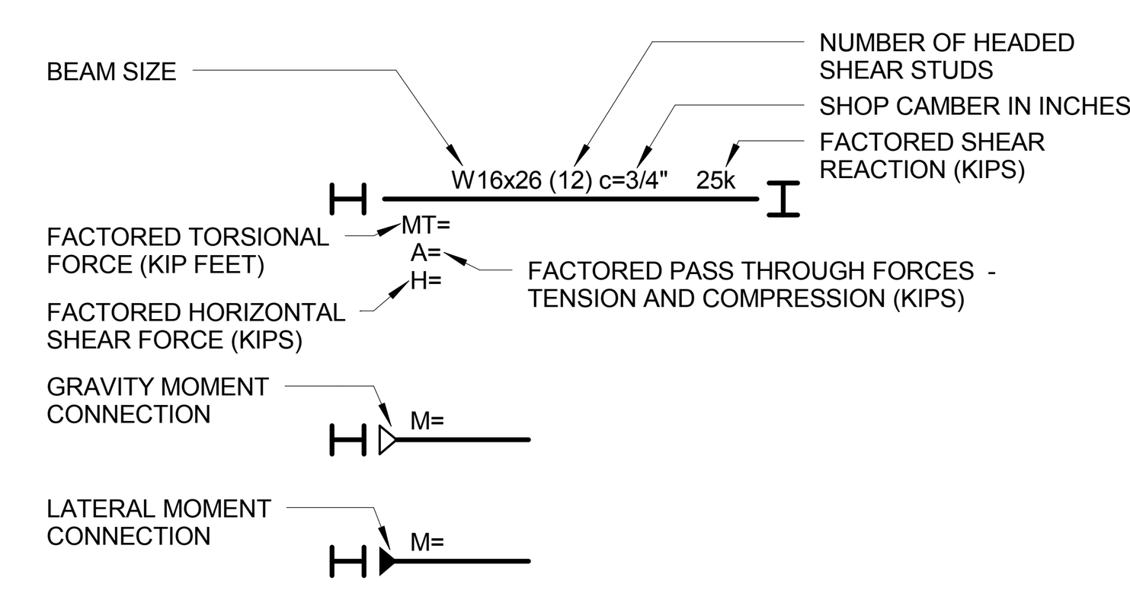
S23
GROUT COLUMN BASE PLATES AFTER BUILDING FRAME HAS BEEN ALIGNED AND PLUMBED, AND PRIOR TO PLACEMENT OF CONCRETE FLOOR SYSTEMS (CIP CONCRETE SLABS, SLABS ON STEEL DECK, ETC).

S24
EVENLY SPACE BEAMS IN BAY, UNO.

S25
PROVIDE NEW MATERIAL CONFORMING TO THE FOLLOWING REQUIREMENTS FOR STRUCTURAL STEEL:

MEMBER	**GRADE**
WIDE FLANGE SHAPES, WT SECTIONS	ASTM A992
CHANNELS AND ANGLES	ASTM A36
PIPE	ASTM A53 GRADE B
HOLLOW STRUCTURAL SECTIONS (RECTANGULAR AND ROUND)	ASTM A500 GRADE B
BASE PLATES	ASTM A572 GRADE 50
ALL OTHER STEEL MEMBERS	ASTM A36 UNO
HIGH STRENGTH BOLTS, NUTS AND WASHERS	ASTM A-325 OR A-490 (MIN. 3/4" DIAMETER)
ANCHOR RODS	ASTM F1554 GRADE 55 UNO
STEEL SHAPE WELDING ELECTRODE	E70XX

STEEL BEAM LEGEND



NOTES:
1 M = DESIGN MOMENT. PROVIDE FULL ELASTIC CAPACITY IF NONE IS LISTED.
2 DESIGN SHEAR REACTION EQUALS 14 KIPS FACTORED IF NONE IS LISTED.
3 BEAM CANTILEVER SHALL MATCH BACK SPAN BEAM SIZE, AND REACTION UNO.

STRUCTURAL STEEL DECK NOTES

SD1
REFER TO DIVISION 05 SPECIFICATION SECTION - STEEL DECKING - FOR REQUIREMENTS IN ADDITION TO THOSE LISTED BELOW.

SD2
FABRICATE STEEL DECKING FROM STEEL TYPE ASTM A653, STRUCTURAL QUALITY HAVING A MINIMUM YIELD STRENGTH OF 33,000 PSI FOR ROOF DECK AND 50,000 PSI FOR COMPOSITE DECK. COMPLY WITH STEEL DECK INSTITUTE SPECIFICATIONS FOR DESIGN, DETAILING, FABRICATION AND ERECTION OF STEEL DECK. USE STRUCTURAL STEEL DECK WITH A MINIMUM THICKNESS OF AT LEAST 20 GAGE, UNLESS NOTED OTHERWISE.

SD3
SUBMIT ENGINEERED AND CHECKED SHOP DRAWINGS INDICATING LOCATION, GAGE AND SIZE OF EACH PIECE OF DECKING. CLEARLY SHOW WELDING DETAILS TO STRUCTURAL FRAMING, SIDE LAP CONNECTION DETAILS, LOCATION OF SHORING AND SUPPLEMENTARY SUPPORT STEEL AS REQUIRED.

SD4
PROVIDE COMPOSITE STEEL DECK WITH WIDE RIBS SUITABLE FOR SHEAR STUD PLACEMENT.

SD5
SUBMIT SHOP DRAWINGS INDICATING EXACT LAYOUT OF STUDS FOR EACH BEAM SIZE, NUMBER OF STUDS, SPAN AND DECK LAYOUT.

SD6
WELD SHEAR STUDS THROUGH STEEL DECK BY PRE-QUALIFIED METHODS.

SD7
WELD DECKING TO STRUCTURAL STEEL BY CERTIFIED WELDERS USING PRE- QUALIFIED PROCEDURES. ESTABLISH A WELDING PROCEDURE FOR THE PUDDLE WELD OF STEEL DECKING TO THE STRUCTURAL STEEL FOR THE PARTICULAR GAGES USED. PRIOR TO THE START OF ERECTION OF THE STEEL DECK, QUALIFY EACH WELDER USING THIS PROCEDURE AS WITNESSED BY THE OWNER'S TESTING LABORATORY. USE STEEL DECK WELDING ELECTRODE OF GRADE E60XX MIN.

SD8
PROVIDE CONTINUOUS SHEET METAL CLOSURES AT SLAB OPENINGS AND SLAB EDGES AND CONTINUOUS DECK CLOSURES AT DECK ENDS. PROVIDE COLUMN CLOSURES, RIDGE AND VALLEY PLATES, CANT STRIPS, RECESSED DRAIN SUMP PANS, ETC PROVIDE SUPPLEMENTAL FRAMING AT OPENINGS AS REQUIRED FOR SUPPORT OF STEEL DECK. PROVIDE TEMPORARY SHORING AS NECESSARY TO CONTROL CANTILEVER DEFLECTIONS DUE TO WET CONCRETE WEIGHT AT FLOOR SLAB EDGES.

SD9
PLACE STEEL DECK OVER A MINIMUM OF THREE (3) SPANS IN THE DIRECTION INDICATED. IF FRAMING GEOMETRY REQUIRES USE OF SINGLE AND/OR DOUBLE SPAN DECKS, PROVIDE DECK OF SUFFICIENT GAGE TO SATISFY STRESS AND DEFLECTION REQUIREMENTS. USE SINGLE SPANS ONLY WHERE NECESSARY. PROVIDE ADEQUATE SHORING FOR SINGLE SPAN COMPOSITE STEEL DECK IF REQUIRED TO COMPLY WITH SDI STRESS AND DEFLECTION REQUIREMENTS.

SD10
THE ASSUMED CONSTRUCTION LIVE LOAD USED IN DESIGN IS A 20 PSF UNIFORM LOAD OR A 150-POUND CONCENTRATED LOAD ON A 1'-0" WIDE SECTION OF DECK. DO NOT EXCEED THE ASSUMED CONSTRUCTION DESIGN LIVE LOAD WITHOUT FIRST TAKING PROPER SAFETY PRECAUTIONS, INCLUDING TEMPORARY SHORING. FOLLOW APPLICABLE LOCAL CODE AND AISI REQUIREMENTS.

SD11
NO LOAD TO BE HUNG FROM ROOF DECK. USE AN APPROPRIATE ANCHORING SYSTEM. HANG DUCTWORK, PIPING, ETC. DIRECTLY FROM STRUCTURAL STEEL OR SUPPLEMENTAL STEEL MEMBERS.

SD12
DO NOT EXCEED A TOTAL SUSPENDED LOAD OF 400 POUNDS IN ANY 40 SQUARE FOOT AREA FROM COMPOSITE STEEL DECK/CONCRETE SLABS WITHOUT REVIEW AND WRITTEN APPROVAL OF THE ENGINEER. SUPPORT LARGER LOADS DIRECTLY FROM STRUCTURAL STEEL OR SUPPLEMENTAL STEEL MEMBERS.

MISCELLANEOUS

M1
EMPLOY A LICENSED SURVEYOR TO VERIFY EXISTING DIMENSIONS, FLOOR ELEVATIONS, AND FLOOR-TO-FLOOR HEIGHTS BEFORE ORDERING, DETAILING, FABRICATING, OR ERECTING STRUCTURAL STEEL. THIS INFORMATION MUST BE CONFIRMED AT LOCATIONS WHERE NEW FLOORS AND ROOFS MEET EXISTING CONSTRUCTION.

M2
CONSULT THE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR LOCATION AND SIZE OF CHASES, INSERTS, OPENINGS, SLEEVES, WASHES, DRIPS, REVEALS, DEPRESSIONS, EQUIPMENT PADS AND OTHER PROJECT REQUIREMENTS. COMBINE THE REQUIREMENTS INTO THE SHOP DRAWINGS AND THE WORK. PROVIDE STRUCTURAL FRAMING PER TYPICAL DETAILS AS REQUIRED AT FLOOR AND ROOF OPENINGS WHERE STRUCTURAL FRAMING IS NOT SHOWN.

M3
THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION OF CONSTRUCTION OF THE PROJECT AND THEN, ONLY TO SUPPORT THE DESIGN LOADS INDICATED. THE CONTRACTOR IS RESPONSIBLE FOR MEANS, METHODS AND SEQUENCE OF CONSTRUCTION AND FOR THE ADEQUACY OF THE STRUCTURE TO SUPPORT LOADS OCCURRING DURING CONSTRUCTION. FURNISH TEMPORARY BRACING, SHORING, AND/OR SUPPORT AS REQUIRED.

M4
CHECK DIMENSIONS AGAINST THE REQUIREMENTS OF OTHER CONTRACT DOCUMENTS. RESOLVE APPARENT INCONSISTENCIES IN THE CONTRACT DOCUMENTS WITH THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH WORK.

M5
SHOW OPENINGS THROUGH STRUCTURAL MEMBERS ON THE SHOP DRAWINGS SUBMITTED FOR REVIEW. OPENINGS WHICH ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS ARE SUBJECT TO REVIEW AND ACCEPTANCE AND ARE TO BE CLEARLY INDICATED FOR REVIEW AND ACCEPTANCE ON THE SHOP DRAWINGS.

M6
DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY SHOWN, USE DETAILS OF SIMILAR CONSTRUCTION, SUBJECT TO APPROVAL BY THE ENGINEER.

M7
WHEREVER THERE IS CONFLICT BETWEEN DETAILS OR TWO DETAILS APPLYING TO THE SAME CONDITION, THE ENGINEER SHALL HAVE SOLE AUTHORITY TO DETERMINE WHICH DETAIL IS THE MOST APPROPRIATE FOR THE CONDITION.

M8
SUBMIT SHOP DRAWINGS AND CALCULATIONS SEALED BY A REGISTERED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MISSOURI FOR EACH OF THE FOLLOWING ASSEMBLIES. COMPLY WITH THE APPLICABLE PROVISIONS OF THE SPECIFICATIONS AND BUILDING CODE FOR LOADING, ALLOWABLE STRESSES AND DEFLECTION LIMITS. SUBMITTALS SHALL BE REVIEWED FOR GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS:

a. COLD FORMED METAL FRAMING ASSEMBLIES THAT ARE NOT USED AS THE PRIMARY VERTICAL LOAD BEARING ELEMENTS OF THE BUILDING. INCLUDE DESIGN OF CONNECTIONS.
b. METAL STAIRS AND METAL RAILINGS: DESIGN THESE ASSEMBLIES TO BE SUPPORTED OFF OF THE BASE BUILDING STRUCTURAL MEMBERS DESIGNED FOR THAT PURPOSE. DESIGN CONNECTIONS THAT MINIMIZE APPLIED TORSIONAL OR ECCENTRIC LOADS INTO THESE MEMBERS.
c. ALL OTHER ASSEMBLIES LISTED IN THE SPECIFICATIONS THAT REQUIRE ENGINEERING CALCULATIONS.

M9
PROMPTLY NOTIFY THE ENGINEER OF ANY STRUCTURAL MEMBER CALLED OUT ON THE ARCHITECTURAL, MECHANICAL, PLUMBING OR ELECTRICAL DRAWINGS THAT IS NOT IDENTIFIED ON THE STRUCTURAL DRAWINGS. DESIGN OF THESE MEMBERS SHALL BE PROVIDED AS NECESSARY BY THE STRUCTURAL ENGINEER UPON NOTIFICATION.

M10
THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE LOCATION AND PLACEMENT OF INSERTS, HANGERS AND OTHER MISCELLANEOUS ITEMS REQUIRED FOR THE SUPPORT OF MECHANICAL, ELECTRICAL AND PLUMBING ITEMS SUSPENDED FROM THE STRUCTURE.

M11
DO NOT MAKE MODIFICATIONS, ALTERATIONS OR REPAIRS TO THE STRUCTURE WITHOUT PRIOR REVIEW BY THE STRUCTURAL ENGINEER. SUBMIT DETAILS AND CALCULATIONS PREPARED BY A PROFESSIONAL ENGINEER REGISTERED IN STATE OF MISSOURI AND EMPLOYED BY CONTRACTOR.

M12
OBTAIN A HOT WORK PERMIT FROM THE COR BEFORE BEGINNING ANY HOT WORK EACH DAY.

M13
PREPARE AND REPAIR DAMAGED GLAVANIZED COATINGS ON BOTH SURFACES OF STEEL WITH GALVANIZED REPAIR PAINT ACCORDING TO ASTM A 780 AND MANUFACTURER'S WRITTEN INSTRUCTIONS.

M14
REFERENCE ELEVATION 100'-0" IS EQUAL TO NORTH AMERICAN VERTICAL DATUM 422.80'.

STRUCTURAL DESIGN LOADS

BUILDING CODES: IBC 2012 BUILDING CODE
VA H-18-8
UFC 4-023-03 (REVISED 1 JUNE 2013)

RISK CATEGORY IV

BUILDING IS NOT DESIGNED FOR ADDITIONAL FUTURE VERTICAL EXPANSION
BUILDING IS NOT DESIGNED FOR ADDITIONAL FUTURE HORIZONTAL EXPANSION

SUPERIMPOSED DEAD LOADS

CEILINGS:	5 PSF
MECHANICAL ITEMS SUSPENDED FROM STRUCTURAL FRAMING:	10 PSF

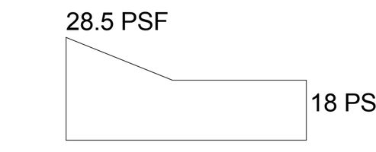
SUPERIMPOSED LIVE LOADS (INCLUDING PARTITION LOADS)

FLOOR LIVE LOADS	
CLINIC	60 PSF
PUBLIC SPACES, EXIT CORRIDORS, STAIRS AND LOBBIES:	100 PSF
MECHANICAL ELECTRICAL AND TELECOM ROOMS:	150 PSF
PARTITION (WHERE LIVE LOAD LESS THAN 100 PSF)	15 PSF
ROOFS	20 PSF

LIVE LOAD REDUCTIONS ARE TAKEN IN ACCORDANCE WITH BUILDING CODE SECTION 1607.9

SNOW LOADS

1. GROUND SNOW LOAD, Pg = 15 PSF
2. SNOW EXPOSURE FACTOR, Ce = 1.0
3. THERMAL FACTOR, Ct = 1.0
4. SNOW IMPORTANCE FACTOR, I = 1.2
5. FLAT ROOF SNOW LOAD, Pf = 18 PSF
6. SNOW DRIFTING LOADING (TYPICAL WHERE ROOF ABUTS HIGHER VERTICAL SURFACE AT LEAST 3'-0" TALL.)



WIND LOADS

1. BASIC WIND SPEED = 120 MPH
2. WIND IMPORTANCE FACTOR = 1.0
3. WIND EXPOSURE CATEGORY = B
4. INTERNAL PRESSURE COEFFICIENT = ±0.18
5. WIND PRESSURE COMPONENTS AND CLADDING:
INTERIOR ZONE: P = +28.8 PSF, P = -31.3 PSF
END ZONE: P = +28.8 PSF, P = -38.6 PSF

(PLUS AND MINUS SIGNS SIGNIFY PRESSURES ACTING TOWARD AND AWAY FROM THE SURFACES, RESPECTIVELY. END ZONES EXTEND FROM CORNERS OF BUILDING A DISTANCE EQUAL TO 10% OF LEAST HORIZONTAL BUILDING DIMENSION, BUT NOT LESS THAN 3 FT.)

6. WIND LOADS ARE BASED ON ASCE 7-10, DIRECTIONAL PROCEDURE

EARTHQUAKE DESIGN DATA

1. SEISMIC IMPORTANCE FACTOR, I = 1.5
2. SPECTRAL RESPONSE ACCELERATIONS
Ss = 1.100
S1 = 0.303
3. SITE CLASSIFICATION = C PER GEOTECHNICAL REPORT.
4. DESIGN SPECTRAL RESPONSE ACCELERATIONS
SDS = 0.733
SD1 = 0.302
5. SEISMIC DESIGN CATEGORY = D
6. ANALYSIS PROCEDURE = MODAL RESPONSE SPECTRUM ANALYSIS PROCEDURE
7. BASIC SEISMIC FORCE RESISTING SYSTEM(S)

STRUCTURAL STEEL SPECIAL MOMENT FRAME SYSTEM

RESPONSE MODIFICATION COEFFICIENT, R = 8
SYSTEM OVERSTRENGTH FACTOR, Ωo = 3
DEFLECTION AMPLIFICATION FACTOR, Cd = 5.5
SEISMIC RESPONSE COEFFICIENT, Cs = 0.1374
DESIGN BASE SHEAR, V = 279k

SYSTEMS AND COMPONENTS REQUIRING SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE

1. MOMENT CONNECTIONS WHICH ARE PART OF SPECIAL MOMENT FRAMES.

SEISMIC BRACING OF ARCHITECTURAL, MECHANICAL AND ELECTRICAL COMPONENTS

1. FOR SEISMIC DESIGN CATEGORY D COMPONENT BRACING REQUIREMENTS ARE AS FOLLOWS:

ARCHITECTURAL COMPONENTS:

Ip = 1.0	REQUIRED
Ip = 1.5	REQUIRED

MECHANICAL/ELECTRICAL COMPONENTS:

Ip = 1.0	REQUIRED
Ip = 1.5	REQUIRED

PROGRESSIVE COLLAPSE DESIGN DATA

1. ALTERNATE PATH METHOD.

CONDUIT IN COMPOSITE SLABS

CP1
DO NOT EMBED ALUMINUM CONDUIT IN CONCRETE UNLESS A SPECIAL COATING IS APPLIED THAT PREVENTS CHEMICAL REACTION BETWEEN CONDUIT AND CONCRETE.

CP2
MAXIMUM OUTSIDE DIAMETER OF EMBEDDED CONDUIT IS 1 INCH. MINIMUM SPACING BETWEEN CONDUITS IS 3 CONDUIT DIAMETERS CLEAR.

CP3
WHERE CONDUIT RUNS PERPENDICULAR TO STEEL DECK FLUTES, PLACE CONDUIT DIRECTLY ON STEEL DECK. WHERE CONDUIT RUNS PARALLEL TO STEEL DECK FLUTES, PLACE ON 3/4 INCH CHAIR IN LOW FLUTE, WITH ONE CONDUIT PER FLUTE MAXIMUM.

CP4
DO NOT PLACE CONDUIT BETWEEN REINFORCING BARS AND CONCRETE SURFACE. PROVIDE MINIMUM 1 1/2 INCH CONCRETE COVER OVER CONDUITS.

CP5
DO NOT LAP OR CROSS CONDUITS AT ANY POINT.

CP6
DO NOT TIE CONDUITS TO HEADED SHEAR STUDS. PLACE PARALLEL CONDUITS AT LEAST 18 INCHES AWAY FROM BEAMS WITH HEADED SHEAR STUDS.

CP7
SINGLE CONDUIT PENETRATIONS ARE NOT PERMITTED IN MORE THAN 3 CONSECUTIVE DECK FLUTES. SUBMIT VARIATIONS TO THE ENGINEER FOR REVIEW PRIOR TO THE ROUTING OF CONDUITS.

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions: | Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

SidePlate
Steel Frame
25909 Pala, Ste 200, 92691
Mission Viejo, CA
949.305.7889

ARCHITECT/ENGINEERS:

CANNONDESIGN
1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.6250
F: 314.241.2570

Drawing Title: **GENERAL NOTES AND ABBREVIATIONS**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **RS** | Drawn: **JW**

Project Number: **657-351**
CANNON DESIGN PROJECT NO. 03850.05

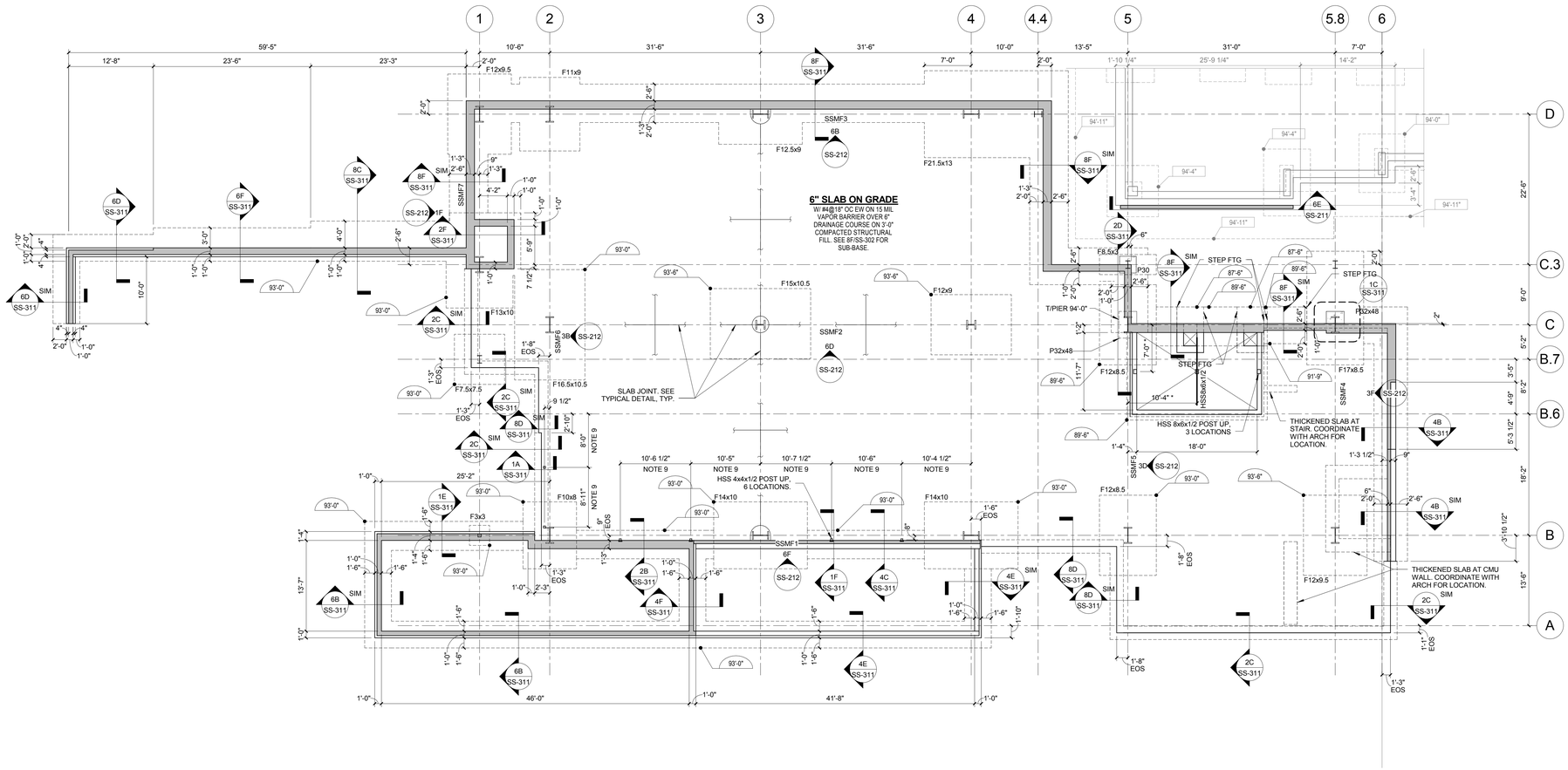
Building Number

Drawing Number: **SS-001**
Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



1 LOWER LEVEL FOUNDATION PLAN

1/8" = 1'-0"

1. FOR GENERAL NOTES AND ABBREVIATIONS, SEE DRAWING SS-001.
2. TOP OF SLAB ELEVATION 95'-0" UNLESS NOTED OTHERWISE [+ OR -] FROM ELEVATION 95'-0".
3. TOP OF FOOTING ELEVATION 94'-0" UNLESS NOTED THUS.
4. F__ AND P__ INDICATE FOOTING AND PIER MARKS. SEE SCHEDULE ON SS-301 FOR FURTHER INFORMATION.
5. TOP OF PIER ELEVATION 100'-0" UNLESS NOTED OTHERWISE.
6. INDICATES MASONRY BEARING OR SHEAR WALL. SEE SCHEDULES ON SS-401.
7. INDICATES DIMENSIONS TO BE COORDINATED DURING CONSTRUCTION WITH APPROVED EQUIPMENT.
8. INDICATES TOP OF EXISTING FOOTING ELEVATION. THESE ELEVATIONS ARE ASSUMED AND SHOULD BE CONSIDER APPROXIMATE. VERIFY IN FIELD.
9. COORDINATE TUBE LOCATION WITH ARCH.

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions:	Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

SidePlate
Steel Frame
25909 Pala, Ste 200, 92691
Mission Viejo, CA
949.305.7889

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

ARCHITECT/ENGINEERS:

CANNONDESIGN

1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.6250
F: 314.241.2570

Drawing Title: **LOWER LEVEL FOUNDATION PLAN**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **RS** | Drawn: **JW**

Project Number: **657-351**
CANNON DESIGN PROJECT NO. 03850.05

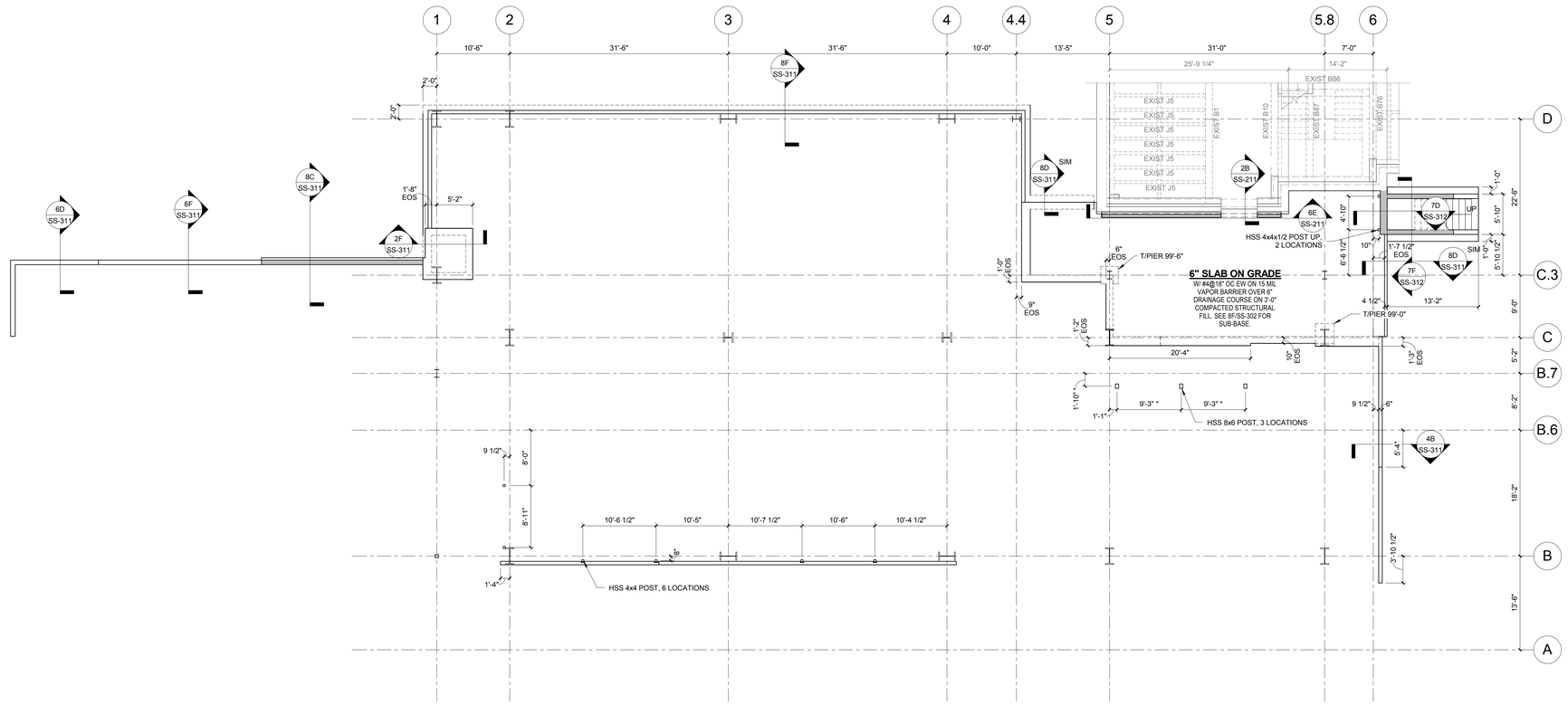
Building Number

Drawing Number: **SS-101**
Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



1 GROUND LEVEL FOUNDATION PLAN

1/8" = 1'-0"

1. FOR GENERAL NOTES AND ABBREVIATIONS, SEE DRAWING SS-001.
2. TOP OF SLAB ELEVATION 100'-0" UNLESS NOTED OTHERWISE [+ OR -] FROM ELEVATION 100'-0"
3. TOP OF FOOTING ELEVATION 91'-0" UNLESS NOTED THUS.
4. F__ AND P__ INDICATE FOOTING AND PIER MARKS. SEE SCHEDULE ON SS-301 FOR FURTHER INFORMATION.
5. TOP OF PIER ELEVATION 100'-0" UNLESS NOTED OTHERWISE.
6. * INDICATES DIMENSIONS TO BE COORDINATED DURING CONSTRUCTION WITH APPROVED EQUIPMENT.

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions:	Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

SidePlate
Steel Frame
25909 Pala, Ste 200, 92691
Mission Viejo, CA
949.305.7889

ARCHITECT/ENGINEERS:

CANNONDESIGN

1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.6250
F: 314.241.2570

Drawing Title: **GROUND LEVEL FOUNDATION PLAN**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **RS** | Drawn: **JW**

Project Number: **657-351**
CANNON DESIGN PROJECT NO. 03850.05

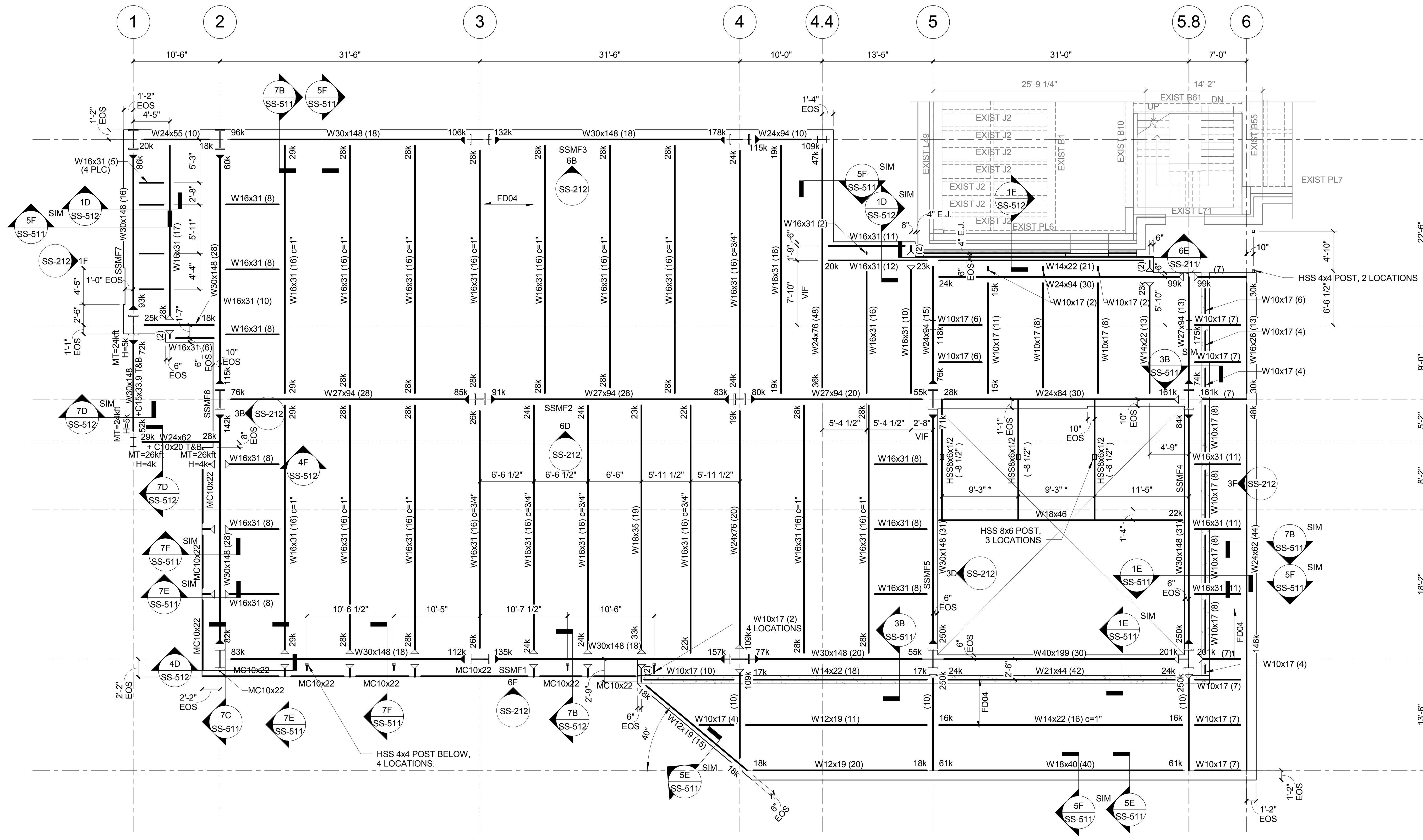
Building Number

Drawing Number: **SS-102**
Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

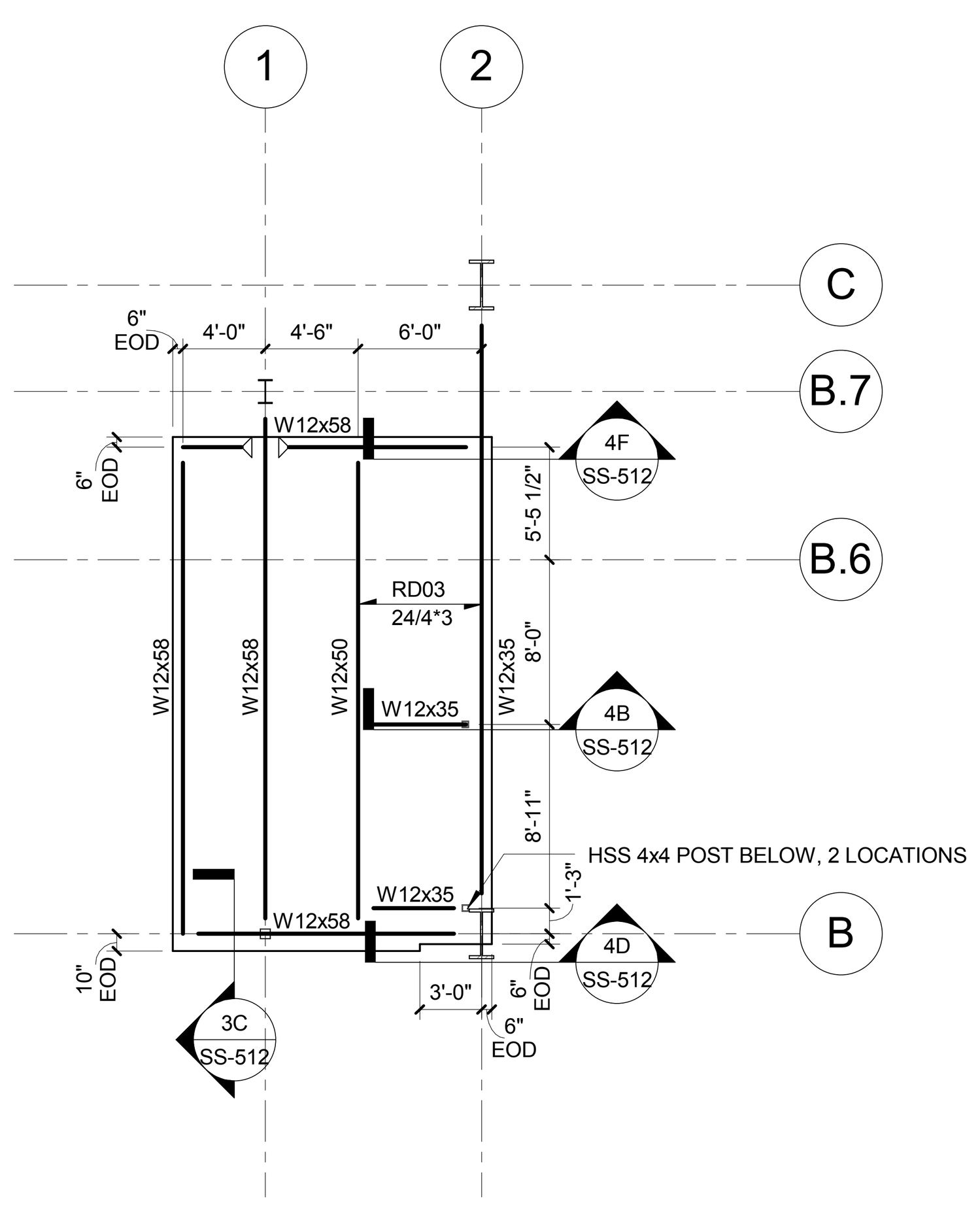
VA FORM 08-6231



1 LEVEL 01 FRAMING PLAN

1/8" = 1'-0"

1. FOR GENERAL NOTES AND ABBREVIATIONS, SEE DRAWING SS-001.
2. TOP OF SLAB ELEVATION 111'-0" UNLESS NOTED OTHERWISE [+ OR -] FROM ELEVATION 111'-0"
3. TOP OF STEEL (-6 1/2") BELOW TOP OF SLAB ELEVATION 111'-0" UNLESS OTHERWISE NOTED (+ OR-) FROM ELEVATION 111'-0"
4. FDO_ INDICATES SPAN DIRECTION OF COMPOSITE FLOOR SLAB. SEE SCHEDULE ON SS-503 FOR SLAB REQUIREMENTS.
5. INDICATES SLAB/DECK OPENING. SET EDGE OF SLAB AT 6" UNLESS NOTED OTHERWISE. SEE SS-503 FOR BEAM SIZES IF NOT INDICATED ON PLAN.
6. ✳ INDICATES DIMENSIONS TO BE COORDINATED DURING CONSTRUCTION WITH APPROVED EQUIPMENT.



2 CANOPY FRAMING PLAN

1/8" = 1'-0"

1. FOR GENERAL NOTES AND ABBREVIATIONS, SEE DRAWING SS-001.
2. TOP OF STEEL ELEVATION 107'-5", UNLESS NOTED OTHERWISE ON PLAN.
3. RDO_ INDICATES SPAN DIRECTION OF METAL ROOF DECK. SEE SCHEDULE ON SS-503 FOR DECK REQUIREMENTS.
4. ✳ INDICATES DIMENSIONS TO BE COORDINATED DURING CONSTRUCTION WITH APPROVED EQUIPMENT.

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions: | Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

SidePlate
Steel Frame
25909 Pala, Ste 200, 92691
Mission Viejo, CA
949.305.7889

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

ARCHITECT/ENGINEERS:

CANNONDESIGN
1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.6250
F: 314.241.2570

Drawing Title: **LEVEL 01 FRAMING PLAN**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **RS** | Drawn: **JW**

Project Number: **657-351**
CANNON DESIGN PROJECT NO. 03850.05

Building Number

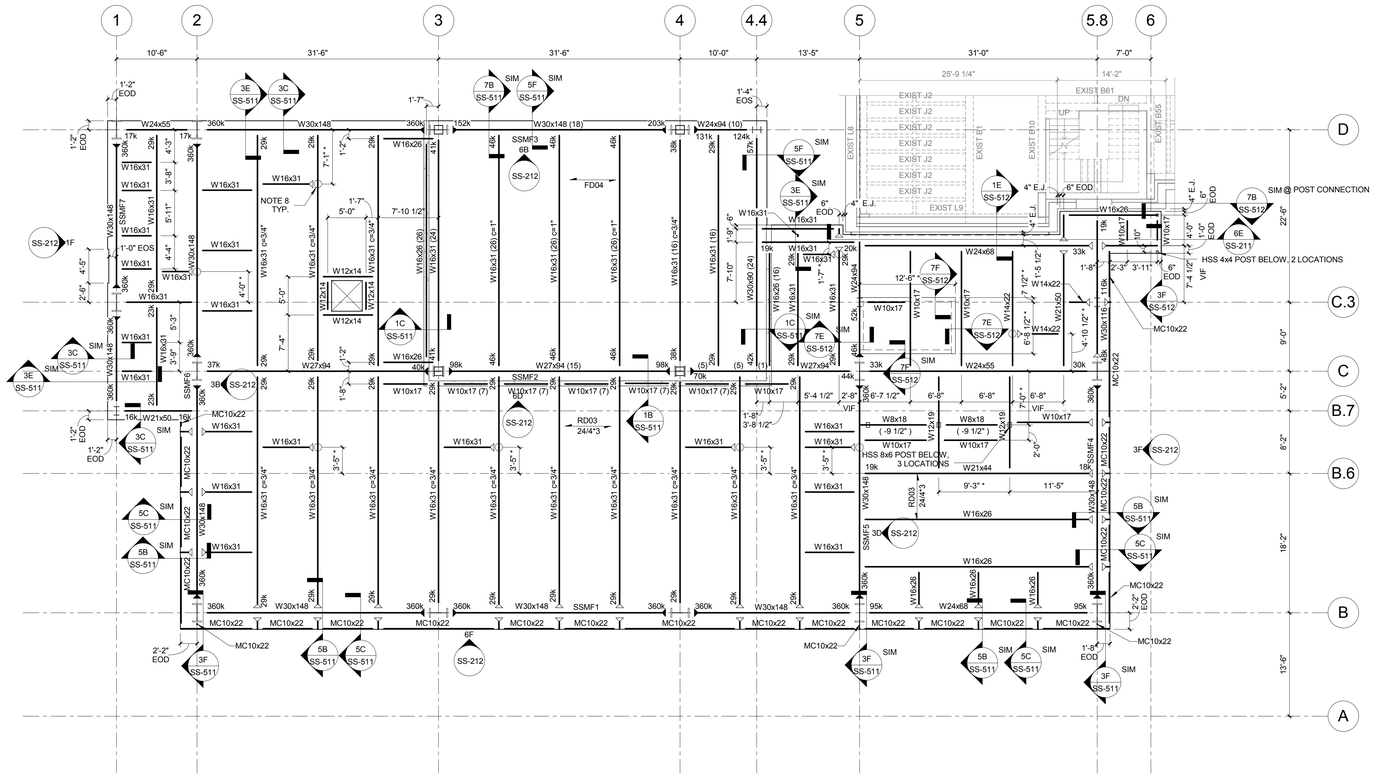
Drawing Number: **SS-103**

Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



1 ROOF/PENTHOUSE FRAMING PLAN

1/8" = 1'-0"

1. FOR GENERAL NOTES AND ABBREVIATIONS, SEE DRAWING SS-001.
2. TOP OF SLAB ELEVATION 125'-0" UNLESS NOTED OTHERWISE [+ OR -] FROM ELEVATION 125'-0"
3. TOP OF STEEL (-6 1/2") BELOW TOP OF SLAB ELEVATION 125'-0" UNLESS OTHERWISE NOTED (+ OR-) FROM ELEVATION 125'-0"
4. FDO_ INDICATES SPAN DIRECTION OF COMPOSITE FLOOR SLAB. SEE SCHEDULE ON SS-503 FOR SLAB REQUIREMENTS.
5. RDO_ INDICATES SPAN DIRECTION OF METAL ROOF DECK. SEE SCHEDULE ON SS-503 FOR DECK REQUIREMENTS.
6. INDICATES SLAB/DECK OPENING. SET EDGE OF SLAB AT 6" UNLESS NOTED OTHERWISE. SEE SS-503 FOR BEAM SIZES IF NOT INDICATED ON PLAN.
7. INDICATES DIMENSIONS TO BE COORDINATED DURING CONSTRUCTION WITH APPROVED EQUIPMENT.
8. SAFETY TIE BACK AT ROOF BEAM. SEE 1F/SS-501 AND COORDINATE WITH ARCH FOR LOCATION.

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions:	Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

SidePlate
Steel Frame
25909 Pala, Ste 200, 92691
Mission Viejo, CA
949.305.7889

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

ARCHITECT/ENGINEERS:

CANNONDESIGN

1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.6250
F: 314.241.2570

Drawing Title: **ROOF/PENTHOUSE FRAMING PLAN**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **RS** | Drawn: **JW**

Project Number: **657-351**
CANNON DESIGN PROJECT NO. 03850.05

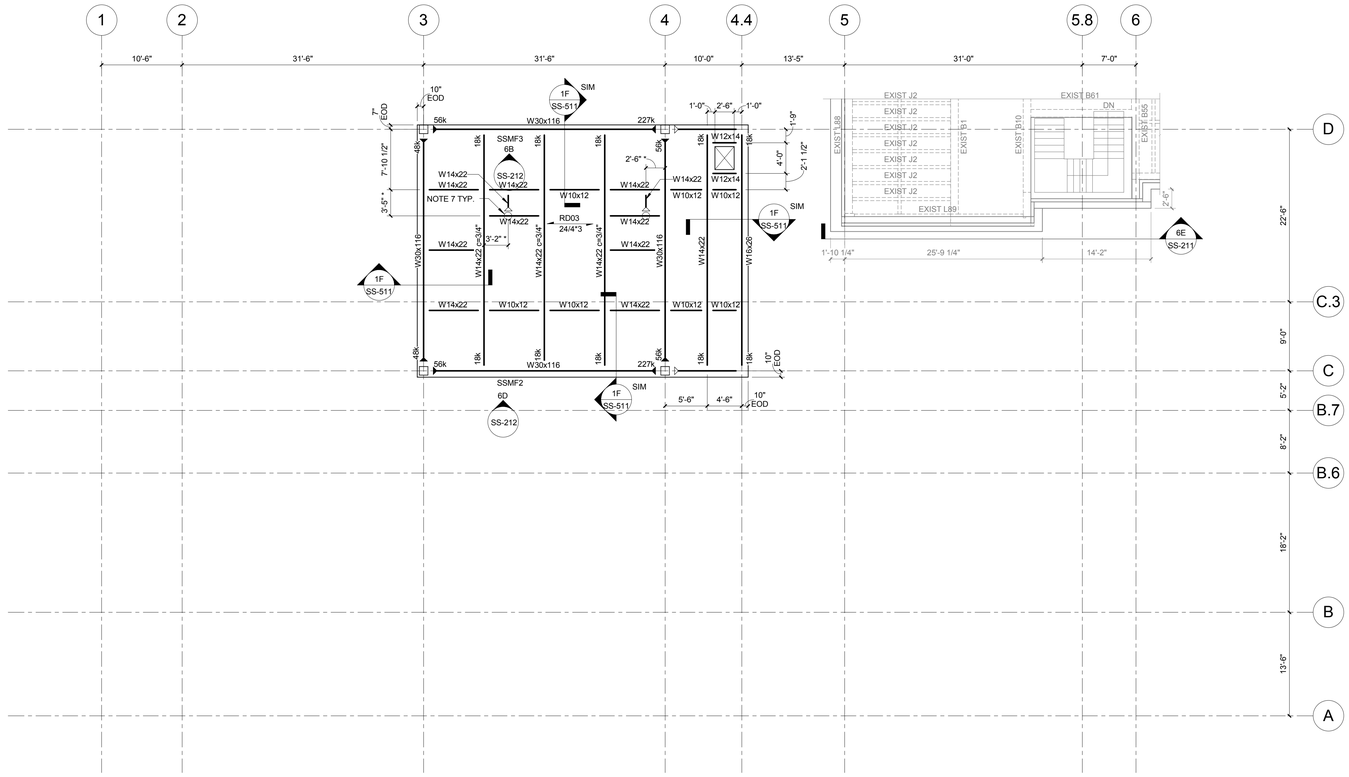
Building Number

Drawing Number: **SS-104**
Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



1 PENTHOUSE ROOF FRAMING PLAN

1/8" = 1'-0"

1. FOR GENERAL NOTES AND ABBREVIATIONS, SEE DRAWING SS-001.
2. BOTTOM OF DECK ELEVATION 136'-9", UNLESS NOTED OTHERWISE ON PLAN.
3. RDO INDICATES SPAN DIRECTION OF METAL ROOF DECK. SEE SCHEDULE ON SS-503 FOR DECK REQUIREMENTS.
4. INDICATES SPANDREL BRACE LOCATIONS - SEE S0501
5. INDICATES SLAB/DECK OPENING. SET EDGE OF SLAB AT 6" UNLESS NOTED OTHERWISE. SEE SS-503 FOR BEAM SIZES IF NOT INDICATED ON PLAN.
6. INDICATES DIMENSIONS TO BE COORDINATED DURING CONSTRUCTION WITH APPROVED EQUIPMENT.
7. SAFETY TIE BACK AT ROOF BEAM. SEE 1F/SS-501 AND COORDINATE WITH ARCH FOR LOCATION.

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions:	Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

SidePlate
Steel Frame
25909 Pala, Ste 200, 92691
Mission Viejo, CA
949.305.7889

ARCHITECT/ENGINEERS:

CANNONDESIGN

1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.6250
F: 314.241.2570

Drawing Title: **PENTHOUSE ROOF FRAMING PLAN**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **RS** | Drawn: **JW**

Project Number: **657-351**
CANNON DESIGN PROJECT NO. 03850.05

Building Number

Drawing Number: **SS-105**
Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

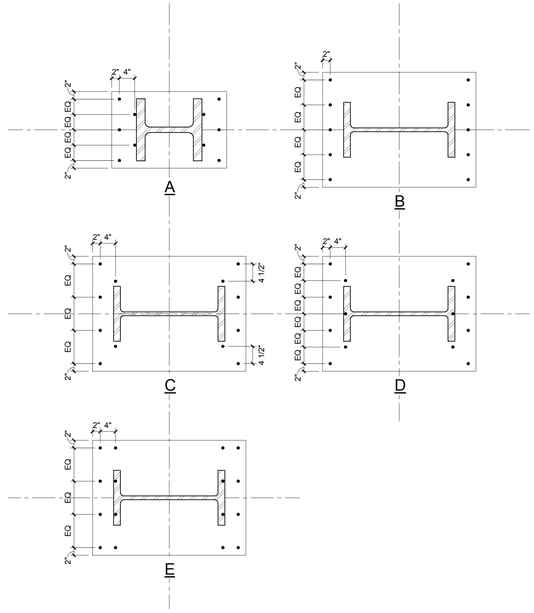
VA FORM 08-6231

STEEL COLUMN SCHEDULE

PENTHOUSE ROOF																					PENTHOUSE ROOF
137'-0" ROOF/PENTHOUSE									HSS14x14x5/8	HSS14x14x5/8								HSS14x14x5/8	HSS14x14x5/8		137'-0" ROOF/PENTHOUSE
125'-0" LEVEL 01		W27x258	W27x258	W27x258	W27x258	W27x258	W14x53	W27x258	W14x311	W14x311	W27x258	W27x258	W27x258	2C SS-501 W14x53	2C SS-501 W14x53	W27x258	W27x258	W27x258	W27x258	W14x61	125'-0" LEVEL 01
111'-0" LOW ROOF																					111'-0" LOW ROOF
107'-8" GROUND LEVEL	HSS8x8x3/8													W14x53	W14x53						107'-8" GROUND LEVEL
100'-0" LOWER LEVEL																					100'-0" LOWER LEVEL
95'-0" B PL TYPE SIZE (TxWxL) AR # AND Ø EMBEDMENT AR GRADE	B 1/2"x14"x14" (4) 3/4"Ø 9" A36	SEE 6D/SS-201	SEE 6D/SS-201	SEE 6D/SS-201	SEE 6D/SS-201	SEE 6D/SS-201	A 1 1/4"x16"x21" (4) 3/4"Ø 9" A36	SEE 6D/SS-201	SEE 6D/SS-201	SEE 6D/SS-201	SEE 6D/SS-201	SEE 6D/SS-201	SEE 6D/SS-201	A 3/4"x16"x21" (4) 3/4"Ø 9" A36	A 3/4"x16"x21" (4) 3/4"Ø 9" A36	SEE 6D/SS-201	SEE 6D/SS-201	SEE 6D/SS-201	SEE 6D/SS-201	A 1 1/2"x18"x21" (4) 3/4"Ø 9" A36	95'-0"
COLUMN LOCATIONS	B-1	B-2	B-3	B-4	B-5	B-5.8	B.7-1	C-2	C-3	C-4	C-5	C-5.8	C.3-1	C.3-5	C.3-5.8	D-1	D-2	D-3	D-4	D-4.4	

STEEL COLUMN SCHEDULE NOTES:

1. SEE PLANS AND DETAILS FOR TOP OF PIER ELEVATIONS.
2. SEE S0001 FOR STEEL NOTES.
3. GROUT COLUMN BASE PLATES AFTER BUILDING FRAME HAS BEEN ALIGNED AND PLUMBED AND PRIOR TO PLACEMENT OF CONCRETE FLOOR SYSTEMS.
4. ⊥ INDICATES GRAVITY SPLICE. TOP OF SPLICE 4'-0" ABOVE TOP OF STEEL, UNO.
5. ⊥ INDICATES MOMENT SPLICE. TOP OF SPLICE 4'-0" ABOVE TOP OF STEEL, UNO.
6. BASE PLATE STEEL MATERIAL SHALL BE A572 GRADE 50.



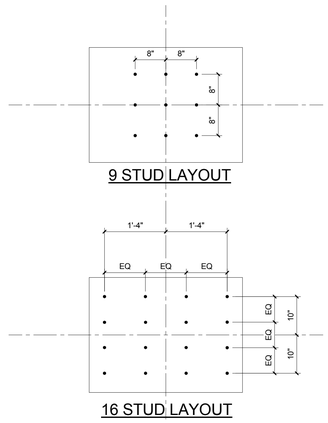
3F LATERAL BASEPLATE REINFORCING LAYOUT
NTS

LATERAL BASE PLATE SCHEDULE

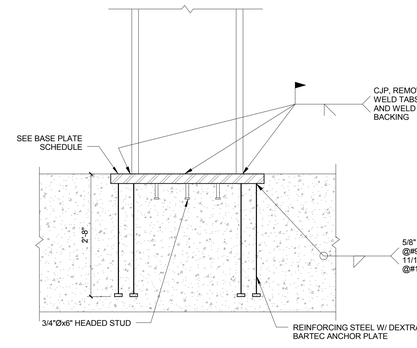
COLUMN LOCATION	LENGTH	WIDTH	THICKNESS	STUDS	REINFORCING	REINFORCING PATTERN
B-2	3'-4"	2'-6"	2 1/2"	16	10-#9	B
B-3	3'-4"	2'-6"	2 3/4"	16	14-#10	D
B-4	3'-4"	2'-6"	2 3/4"	16	16-#10	E
B-5	3'-4"	2'-6"	2 1/2"	9	14-#10	D
B-5.8	3'-4"	2'-6"	2 1/2"	9	12-#10	C
C-2	3'-4"	2'-6"	2 1/2"	9	10-#9	B
C-3	2'-6"	1'-8"	3"	9	10-#9	A
C-4	2'-6"	1'-8"	3"	9	10-#9	A
C-5	3'-4"	2'-6"	2 3/4"	9	14-#10	D
C-5.8	3'-4"	2'-0"	2 3/4"	9	14-#10	D
C.3-1	3'-4"	2'-0"	2 1/2"	9	10-#9	B
D-1	3'-4"	2'-6"	2 1/4"	9	12-#9	C
D-2	3'-4"	2'-6"	2 1/4"	9	10-#9	B
D-3	3'-4"	2'-6"	2 3/4"	9	14-#10	D
D-4	3'-4"	2'-6"	2 3/4"	9	14-#10	D

NOTES:
1. BASE PLATE STEEL MATERIAL SHALL BE A572 GRADE 50.
2. ALL BASE PLATES SHALL BE HOT DIP GALVANIZED.

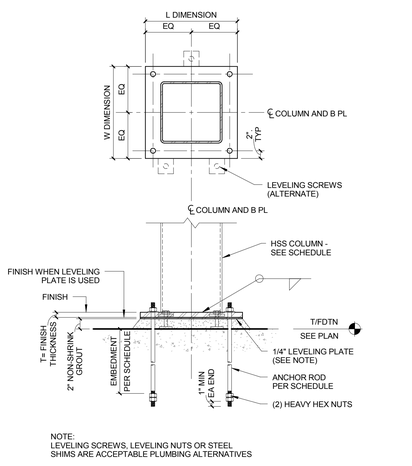
6D LATERAL BASE PLATE SCHEDULE
NTS



6F LATERAL BASEPLATE STUD LAYOUT
NTS

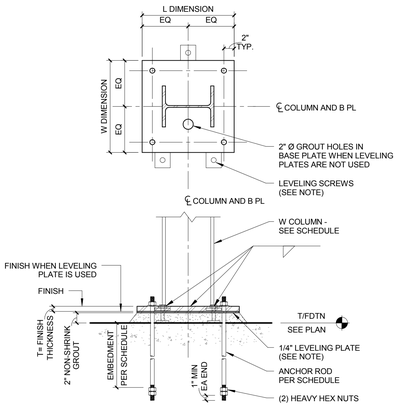


8B TYPICAL LATERAL BASE PLATE DETAIL
NTS



NOTE:
LEVELING SCREWS, LEVELING NUTS OR STEEL SHIMS ARE ACCEPTABLE PLUMBING ALTERNATIVES

8D TYPICAL STEEL COLUMN BASE DETAIL - TYPE B
NTS



NOTE:
LEVELING PLATES, LEVELING SCREWS, LEVELING NUTS OR STEEL SHIMS ARE ACCEPTABLE FOR BASE PLATES 18" SQUARE AND SMALLER, OTHERWISE USE EITHER LEVELING SCREWS OR STEEL SHIMS

8F TYPICAL STEEL COLUMN BASE DETAIL - TYPE A
NTS

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions: | Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

SidePlate
Steel Frame
25909 Pala, Ste 200, 92691
Mission Viejo, CA
949.305.7889

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

ARCHITECT/ENGINEERS:

CANNONDESIGN

1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.6250
F: 314.241.2570

Drawing Title: **STEEL COLUMN SCHEDULE AND DETAILS**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **RS** | Drawn: **JW**

Project Number: **657-351** (CANNON DESIGN PROJECT NO. 03850.05)

Building Number

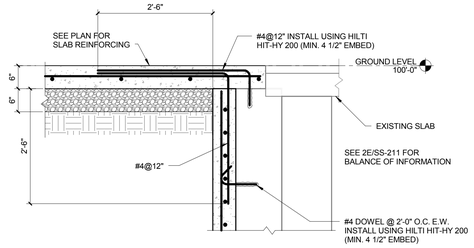
Drawing Number: **SS-201**

Dwg. of

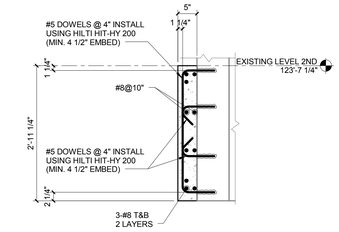
Office of Construction and Facilities Management

Department of Veterans Affairs

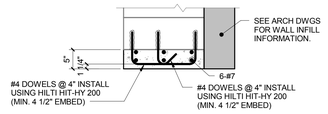
VA FORM 08-6231



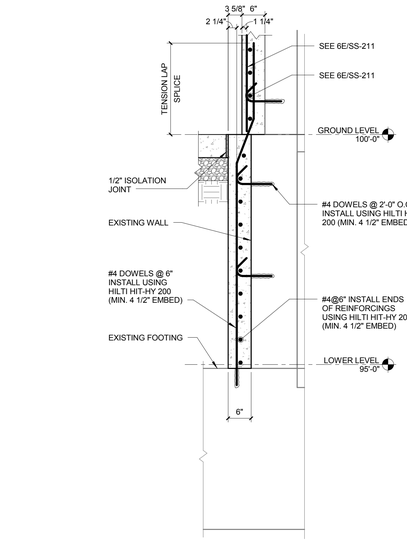
2B SECTION
3/4" = 1'-0"



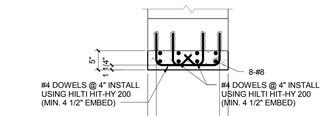
4A SECTION
3/4" = 1'-0"



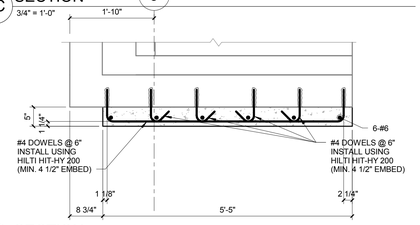
4B SECTION
3/4" = 1'-0"



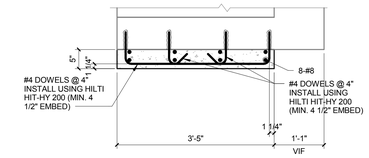
2E SECTION
3/4" = 1'-0"



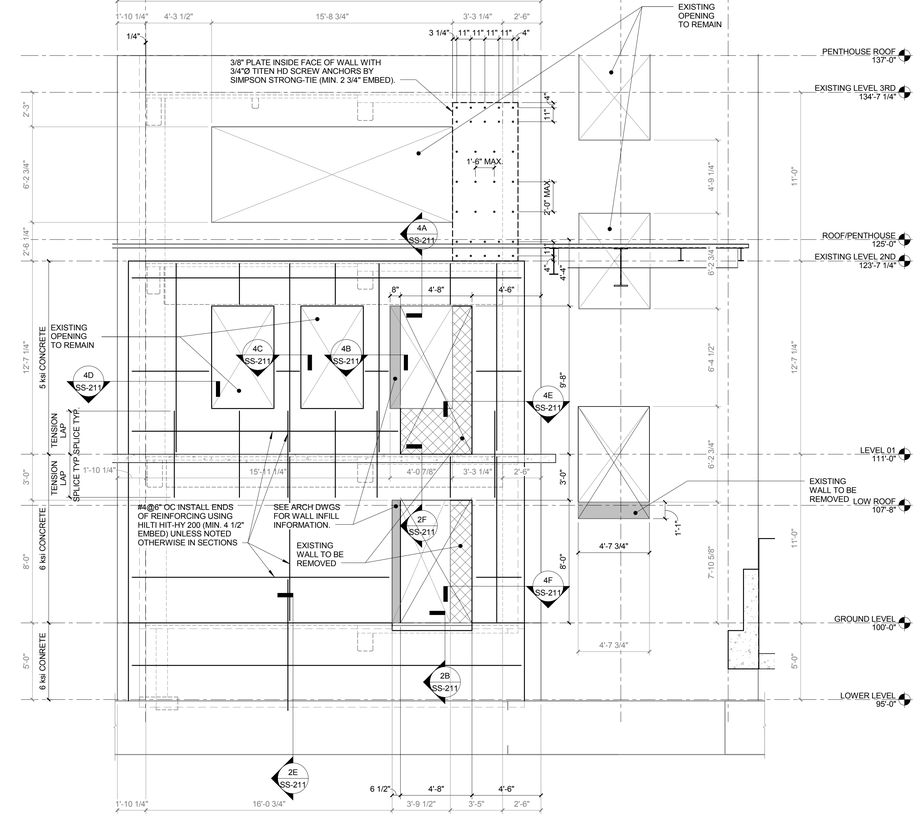
4C SECTION
3/4" = 1'-0"



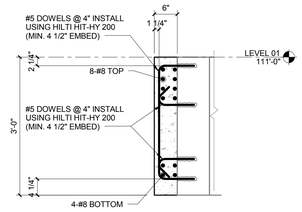
4D SECTION
3/4" = 1'-0"



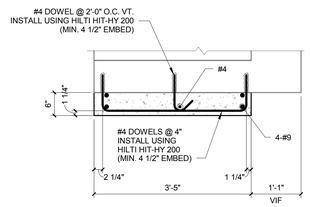
4E SECTION
3/4" = 1'-0"



6E EXISTING WALL ELEVATION
1/4" = 1'-0"



2F SECTION
3/4" = 1'-0"



4F SECTION
3/4" = 1'-0"

NEW CONCRETE WALL INSTALLATION PROCEDURE

1. REMOVE EXISTING EXTERIOR BRICK.
2. REMOVE EXISTING MORTAR TO EXPOSE THE ENTIRE AREA OF EXISTING CONCRETE WALL.
3. CUT THE REQUIRED NEW OPENINGS INTO THE EXISTING CONCRETE WALL. **DO NOT OVER CUT THE NEW OPENING CORNERS. CARE MUST BE TAKEN WHEN CUTTING THE NEW OPENINGS.**
4. LOCATE ALL EXISTING REINFORCING IN THE EXISTING CONCRETE WALL.
5. LOCATE THE NEW REINFORCING THAT NEEDS TO BE DRILLED INTO THE EXISTING CONCRETE AND EPOXIED TO MISS THE EXISTING REINFORCING.
6. INSTALL THE NEW REINFORCING AS INDICATED ON THESE CONTRACT DOCUMENTS.
7. WHEN THE REINFORCING IS COMPLETE AND BEFORE PLACING NEW CONCRETE, CLEAN THE AREA WHERE CONCRETE WILL BE PLACED OF ANY CONCRETE DUST, ETC., AND COVER THE AREA WITH A BONDING AGENT.
8. INSTALL FORMS IN THIS AREA.
9. PLACE CONCRETE.
10. REMOVE FORMS WHEN THE CONCRETE HAS OBTAINED ITS STRENGTH AS SPECIFIED IN THE SPECIFICATIONS.
11. WHEN THE PLACEMENT OF THE CONCRETE IS COMPLETE, SEE ARCHITECTURAL DRAWINGS FOR REQUIRED INFILL INFORMATION AS NOTED ON THE EXISTING WALL ELEVATION ABOVE.
12. PLACE THE NEW BRICK VENEER.

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions:	Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

SidePlate
Steel Frame
25909 Pala, Ste 200, 92691
Mission Viejo, CA
949.305.7889

ARCHITECT/ENGINEERS:

CANNONDESIGN

1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.8250
F: 314.241.2570

Drawing Title: **LATERAL SYSTEM ELEVATIONS**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **RS** | Drawn: **JW**

Project Number: **657-351** (CANNON DESIGN PROJECT NO. 03850.05)

Building Number

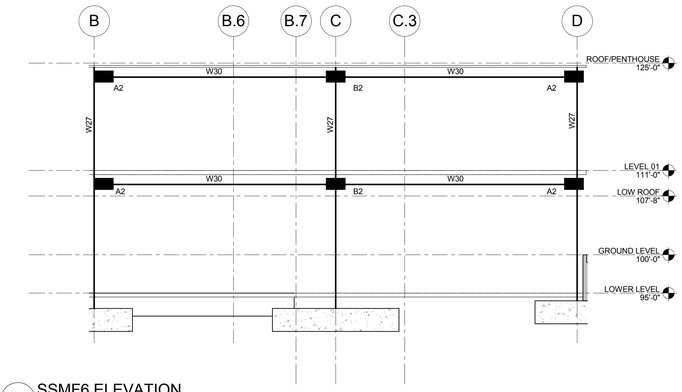
Drawing Number: **SS-211**

Dwg. of

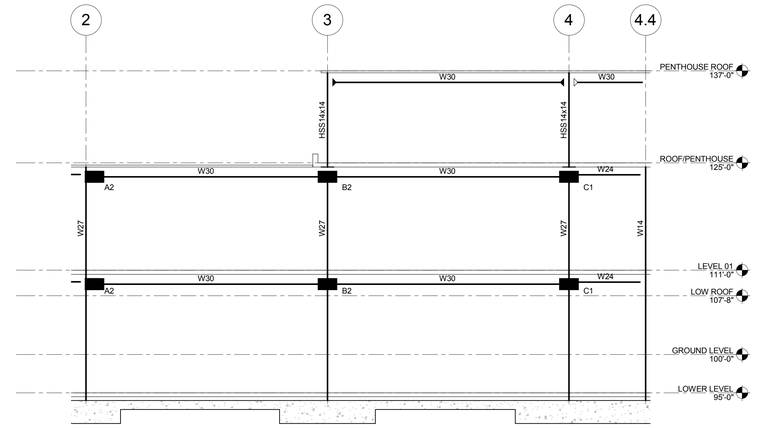
Office of Construction and Facilities Management

Department of Veterans Affairs

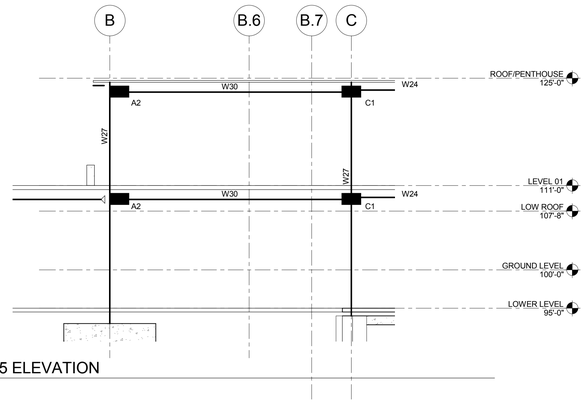
VA FORM 08-6231



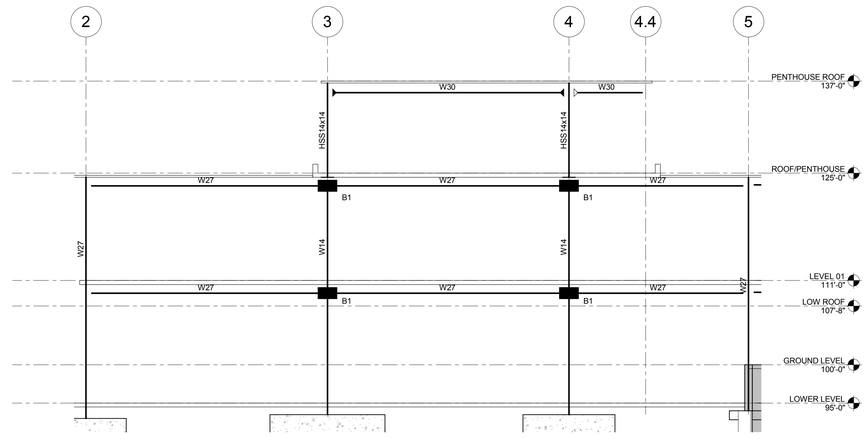
3B SSMF6 ELEVATION
1/8" = 1'-0"



6B SSMF3 ELEVATION
1/8" = 1'-0"

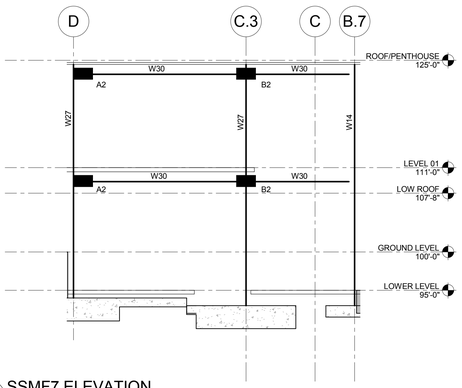


3D SSMF5 ELEVATION
1/8" = 1'-0"

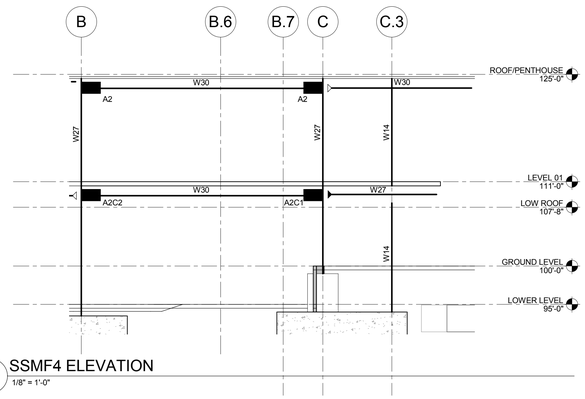


6D SSMF2 ELEVATION
1/8" = 1'-0"

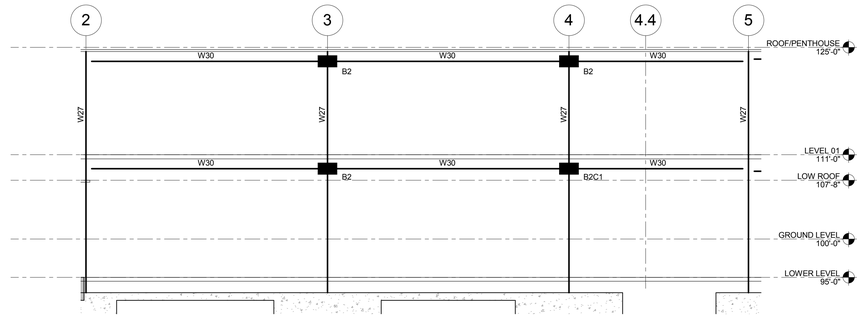
NOTES:
1. ■ INDICATES SIDEPLATE CONNECTION.
2. MARK A1 TO C2 IS THE CONNECTION ID OF SIDEPLATE CONNECTION.
3. SEE SHEETS SS-601 THRU SS-605 FOR SIDEPLATE INFORMATION.



1F SSMF7 ELEVATION
1/8" = 1'-0"



3F SSMF4 ELEVATION
1/8" = 1'-0"



6F SSMF1 ELEVATION
1/8" = 1'-0"

CONSTRUCTION DOCUMENTS FINAL REVIEW SUBMISSION NOT FOR CONSTRUCTION

Revisions:	Date

CONSULTANTS:

Name of Consultant 1
Discipline
Address
City, State Zipcode
Telephone

ARCHITECT/ENGINEERS:

CANNONDESIGN

Drawing Title: **LATERAL SYSTEM ELEVATIONS**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff Missouri**

Date: **JUNE 16, 2014**

Checked: **Checker**

Drawn: **Author**

Project Number: **657-351**
CANNON DESIGN PROJECT NO. 03850.05

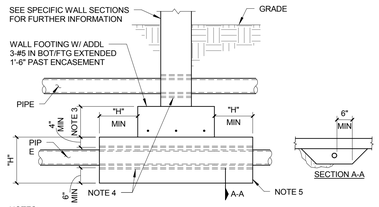
Building Number

Drawing Number: **SS-212**
Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



NOTES:
1. DO NOT PLACE PIPE TRENCH BELOW COLUMN FOOTINGS.
2. DO NOT PLACE PIPE TRENCH BELOW WALL FOOTINGS IF PIPE RUNS PARALLEL WITH WALL.
3. NO PIPES WITHIN FTG DEPTH. STEP FTG DOWN BELOW PIPE IF ELEVATION CONFLICT.
4. SLEEVES TO BE 1" CLEAR AROUND PIPE. WRAP PIPE W/ COMPRESSIBLE MATERIAL.
5. PLACE CONCRETE FILL AROUND SLEEVE PRIOR TO POURING FOUNDATION.
6. DIMENSIONS NOTED ARE MINIMUM. IF DIMENSIONS CONFLICT WITH DIMENSIONS GIVEN ELSEWHERE, COMPLY WITH MORE STRINGENT REQUIREMENT.

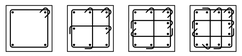
4B TYPICAL PIPE PENETRATION DETAIL
1/2" = 1'-0"

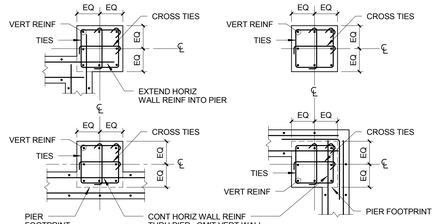
CONCRETE PIER SCHEDULE					
			REINFORCEMENT		
MARK	WIDTH	LENGTH	VERTICAL	TIES	REMARKS
P30	30"	30"	8-#9	#4@12"	
P32x48	32"	48"	12-#9	#4@12"	

PIER SCHEDULE NOTES:

1. SET LOWEST TIE AT ONE HALF THE TIE SPACING ABOVE TOP OF FOOTING.
2. PROVIDE TIES AT 4" ON CENTER FULL LENGTH OF ANCHOR RODS.
3. "W" DIMENSION IS PERPENDICULAR TO COLUMN WEB.
4. "L" DIMENSION IS PARALLEL WITH COLUMN WEB.
5. PIERS ARE CENTERED ON COLUMN CENTERLINES UNLESS NOTED OTHERWISE.
6. CONFIGURE TIES USING ACI REQUIREMENTS AND TO AVOID CONFLICTS WITH ANCHOR RODS

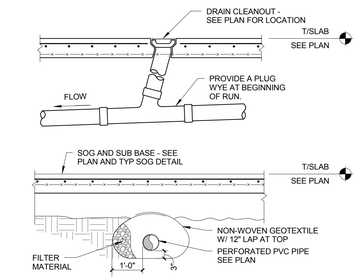
6B PIER SCHEDULE AND NOTES
1/2" = 1'-0"



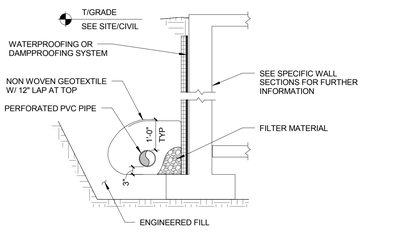


NOTES:
1. PROVIDE 135 DEGREE HOOKS AT TIES.
2. PROVIDE 135 DEGREE AND 90 DEGREE HOOKS AT CROSS TIES.
3. ALTERNATE HOOK LOCATIONS AT CONSECUTIVE TIES.

6C TYPICAL PIER DETAILS
1/2" = 1'-0"



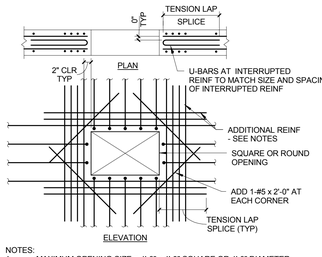
8B TYPICAL INTERIOR SUB-SOIL DRAIN AND CLEANOUT
1/2" = 1'-0"



8C TYPICAL FOUNDATION DRAIN AT BELOW GRADE SPACES
1/2" = 1'-0"

TENSION LAP SPLICE LENGTHS FOR BARS ENCLOSED IN TIES OR STIRRUPS

BAR SIZE	CONCRETE COMPRESSIVE STRENGTH											
	3,000 PSI			4,500 PSI			5,000 PSI			6,000 PSI		
	BAR TYPE		STD HOOK DEV	BAR TYPE		STD HOOK DEV	BAR TYPE		STD HOOK DEV	BAR TYPE		STD HOOK DEV
	TOP	OTHER		TOP	OTHER		TOP	OTHER		TOP	OTHER	
#3	28	22	6	23	17	6	22	17	6	20	15	6
#4	38	29	8	30	23	6	29	23	6	26	20	6
#5	47	36	10	38	29	8	36	28	7	33	25	7
#6	56	43	12	45	35	9	44	34	9	39	30	8
#7	81	63	13	66	51	11	63	49	10	57	44	9
#8	93	72	15	76	58	13	72	56	12	65	50	11
#9	105	81	17	85	66	14	81	63	13	74	57	12
#10	118	91	19	96	74	16	92	71	15	83	64	14
#11	131	101	22	107	82	18	102	78	17	92	71	15



NOTES:
1. MAXIMUM OPENING SIZE = 4'-0" x 4'-0" SQUARE OR 4'-0" DIAMETER.
2. PROVIDE 1/2 THE NUMBER OF BARS INTERRUPTED BY THE OPENING PLUS ONE MORE OF THE SAME SIZE AT EACH SIDE OF OPENING
3. SPACE ADDITIONAL BARS AT 3" ON CENTER.
4. NO ADDITIONAL REINF REQUIRED FOR OPENINGS 10" OR LESS.

4C TYPICAL WALL OPENING REINFORCING
1/2" = 1'-0"

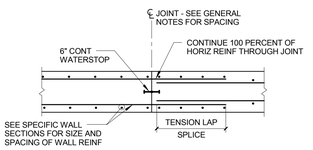
TENSION LAP SPLICE LENGTHS FOR BARS NOT ENCLOSED IN TIES OR STIRRUPS

BAR SIZE	CONCRETE COMPRESSIVE STRENGTH											
	3,000 PSI			4,500 PSI			5,000 PSI			6,000 PSI		
	BAR TYPE		STD HOOK DEV	BAR TYPE		STD HOOK DEV	BAR TYPE		STD HOOK DEV	BAR TYPE		STD HOOK DEV
	TOP	OTHER		TOP	OTHER		TOP	OTHER		TOP	OTHER	
#3	17	16	6	16	16	6	16	16	6	16	16	6
#4	28	22	8	23	18	6	22	17	6	20	16	6
#5	41	32	10	34	26	8	32	25	7	29	22	7
#6	56	43	12	45	35	9	44	34	9	39	30	8
#7	90	69	13	73	56	11	70	54	10	64	49	9
#8	112	86	15	92	71	13	87	67	12	79	61	11
#9	135	104	17	111	85	14	105	81	13	96	74	12
#10	163	126	19	133	103	16	127	97	15	116	89	14
#11	190	146	22	155	119	18	147	114	17	134	103	15

NOTES:
1. TABULATED VALUES ARE GIVEN IN INCHES.
2. DIVIDE TABULATED VALUES BY 1.30 TO ACHIEVE STRAIGHT BAR TENSION DEVELOPMENT LENGTHS.
3. APPLY A 1.30 MULTIPLIER ON TABULATED VALUES FOR USE IN LIGHTWEIGHT CONCRETE.
4. APPLY A 1.50 MULTIPLIER ON TABULATED VALUES FOR EPOXY COATED BARS WITH COVER LESS THAN 3 BAR DIAMETERS OR CLEAR SPACING LESS THAN 6 BAR DIAMETERS. APPLY A 1.20 MULTIPLIER ON ALL OTHER EPOXY COATED BARS.
5. MULTIPLIERS FOR LIGHTWEIGHT CONCRETE AND EPOXY COATING ARE ADDITIVE.
6. TOP BARS ARE DEFINED AS HORIZONTAL REINFORCEMENT WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE DEVELOPMENT LENGTH OR SPLICE.
7. "SIDE LAP" LAP SPLICES TO MAINTAIN SPECIFIED CONCRETE COVER. WHEN BARS OF DIFFERENT SIZE ARE LAP SPLICED, USE THE SPLICE LENGTH OF THE SMALLER BAR.
8. NON-CONTACT SPLICES NOT PERMITTED.

2E TENSION LAP SPLICE LENGTHS FOR GRADE 60 REINFORCEMENT
1/2" = 1'-0"

4E TYPICAL STEPPED WALL FOOTING DETAIL
1/2" = 1'-0"



NOTES:
1. WATERSTOP REQUIRED FOR SUB-GRADE WALLS RETAINING BACKFILL MATERIAL. OMIT OTHERWISE.
2. ROUGHEN FIRST POUR TO A 1/4" AMPLITUDE OR FORM THE JOINT WITH A STAY-IN-PLACE PERFORATED METAL BULKHEAD TO ACHIEVE THE SAME RESULT.

6E TYPICAL WALL CONSTRUCTION JOINT
1/2" = 1'-0"

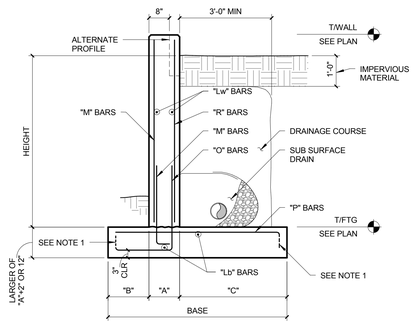
FOOTING SCHEDULE					
ALLOWABLE BEARING PRESSURE (PSF)					
5000					
				REINFORCING (TOP & BOTTOM UON)	
MARK	WIDTH	LENGTH	THICKNESS	LONG WAY	SHORT WAY	REMARKS
F3x3	3'-0"	3'-0"	1'-6"	7#8	7#8	
F7.5x7.5	7'-6"	7'-6"	1'-6"	7#8	7#8	BOTTOM ONLY
F8.5x3	3'-0"	8'-6"	1'-4"	4#6	9#6	
F10x8	10'-0"	8'-0"	3'-0"	9#8	11#8	
F11x9	11'-0"	9'-0"	3'-0"	10#8	12#8	
F12.5x9	12'-6"	9'-0"	3'-0"	10#8	13#8	
F12x8.5	12'-0"	8'-6"	3'-0"	10#8	14#8	
F12x9	12'-0"	9'-0"	3'-0"	10#8	15#8	
F12x9.5	12'-0"	9'-6"	3'-0"	11#8	14#8	
F13x10	13'-0"	10'-0"	3'-0"	11#8	15#8	
F14x10	14'-0"	10'-0"	3'-0"	11#8	16#8	
F15x10.5	15'-0"	10'-6"	3'-0"	13#8	18#8	
F16.5x10.5	16'-6"	10'-6"	3'-0"	14#8	20#8	
F17x8.5	17'-0"	8'-6"	3'-0"	11#8	19#8	
F21.5x13	21'-6"	13'-0"	3'-0"	17#8	23#8	

FOOTING SCHEDULE NOTES:

1. SEE PLANS AND DETAILS FOR TOP OF FOOTING ELEVATIONS.
2. SEE SS-001 FOR FOUNDATION AND CONCRETE NOTES.

8E FOOTING SCHEDULE AND NOTES
1/2" = 1'-0"

RETAINING WALL SCHEDULE										
HEIGHT	BASE	"B"	"A"	"C"	"O" BARS	"P" BARS	"Lw" BARS	"M" BARS	"Lb" BARS	"R" BARS
UP TO 3'-0"	2'-8"	12"	8"	1'-0"	#4@9" **	#4@9" **	#4@12"	NOT REQD	#5@12"	SEE NOTE 2
3'-1" TO 5'-0"	3'-2"	12"	8"	1'-6"	#4@9" **	#4@9"	#4@12"	NOT REQD	#5@12"	SEE NOTE 2
5'-1" TO 7'-0"	4'-6"	1'-6"	8"	2'-4"	#4@9"	#4@9"	#4@12"	NOT REQD	#5@12"	#4@18"
7'-1" TO 9'-0"	6'-2"	1'-10"	8"	3'-8"	#4@6" #5@9"	#5@12"	#4@12"	NOT REQD	#5@12"	#5@18"
9'-1" TO 11'-0"	7'-10"	2'-4"	1'-0"	4'-8"	#4@4" #5@9"	#4@8" #5@18"	#4@16"	#5@16"	#5@12"	#5@18"
11'-1" TO 13'-0"	9'-4"	2'-8"	1'-0"	5'-8"	#5@4" #6@8"	#5@8" #7@16"	#4@16"	#5@16"	#5@12"	#6@16"
13'-1" TO 15'-0"	10'-10"	3'-0"	1'-2"	6'-8"	#5@4" #6@6"	#6@8" #7@12"	#4@16"	#5@16"	#6@12"	#6@12"



NOTES:
1. STANDARD HOOK WHERE INDICATED ** IN SCHEDULE.
2. NOT REQUIRED EXTEND "O" BARS TO TOP OF WALL.
3. PROVIDE 2 INCHES OF CLEAR COVER UNLESS NOTED OTHERWISE.
4. ROUGHEN JOINT BETWEEN WALL AND FOOTING TO A 1/4-INCH AMPLITUDE.
5. PROVIDE TENSION LAP SPLICES AT VERTICAL "M" AND "O" BARS.

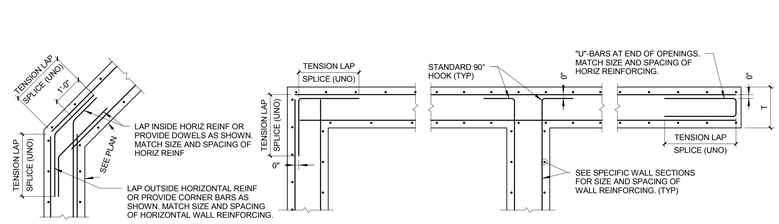
1F TYPICAL RETAINING WALL SCHEDULE AND DETAIL
1/2" = 1'-0"

COMPRESSION DEVELOPMENT AND LAP SPLICE LENGTHS

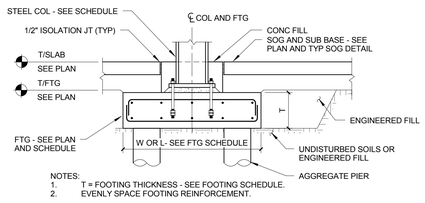
BAR SIZE	CONCRETE COMPRESSIVE STRENGTH					
	3,000 PSI		4,000 PSI		5,000 PSI	
	DEV	SPLICE	DEV	SPLICE	DEV	SPLICE
#3	9	12	8	12	8	12
#4	11	15	10	15	9	15
#5	14	19	12	19	12	19
#6	17	23	15	23	14	23
#7	20	27	17	27	16	27
#8	22	30	19	30	18	30
#9	25	34	22	34	21	34
#10	28	39	25	39	23	39
#11	31	43	27	43	26	43

NOTES:
1. TABULATED VALUES ARE GIVEN IN INCHES.
2. COMPRESSION SPLICES PERMISSIBLE ONLY WHERE SPECIFICALLY NOTED.
3. TABLE IS APPLICABLE FOR NORMAL WEIGHT CONCRETE.
4. TABLE NOT APPLICABLE FOR EPOXY COATED REINFORCEMENT
5. "SIDE LAP" LAP SPLICES TO MAINTAIN SPECIFIED CONCRETE COVER.
6. WHEN BARS OF DIFFERENT SIZE ARE LAP SPLICED, THE SPLICE LENGTH SHALL BE THE LARGER OF THE DEVELOPMENT LENGTH OF THE LARGER BAR, OR THE SPLICE LENGTH OF THE SMALLER BAR.

2F COMPRESSION LAP SPLICE LENGTHS FOR GRADE 60 REINFORCEMENT
1/2" = 1'-0"



4F TYPICAL WALL REINFORCING DETAILS
1/2" = 1'-0"



NOTES:
1. T = FOOTING THICKNESS - SEE FOOTING SCHEDULE.
2. EVENLY SPACE FOOTING REINFORCEMENT.

8F TYPICAL COLUMN FOOTING WITHOUT PIER
1/2" = 1'-0"

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions:	Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

SidePlate
Steel Frame
25909 Pala, Ste 200, 92691
Mission Viejo, CA
949.305.7889

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

ARCHITECT/ENGINEERS:

CANNONDESIGN

1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.6250
F: 314.241.2570

Drawing Title: **TYPICAL FOUNDATION DETAILS**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **RS** | Drawn: **JW**

Project Number: **657-351** (CANNON DESIGN PROJECT NO. 03850.05)

Building Number

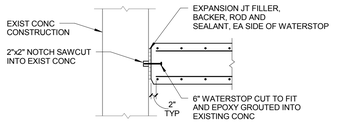
Drawing Number: **SS-301**

Dwg. of

Office of Construction and Facilities Management

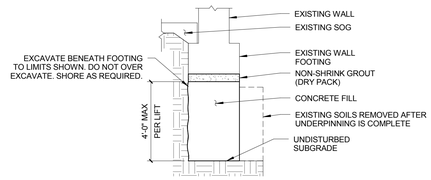
Department of Veterans Affairs

VA FORM 08-6231

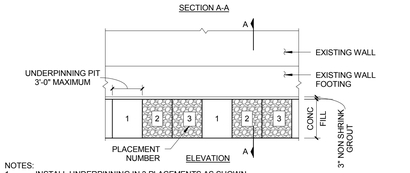


NOTES:
1. WATERSTOPS ARE CENTERED IN NEW WALLS UNLESS OTHERWISE SHOWN.
2. PROVIDE 3/4" CHAMFER AT EXPOSED CORNERS.
3. SEALANT DEPTH SHALL BE A MINIMUM OF 1/2 THE JOINT WIDTH.
4. SEPARATE SEALANT FROM JOINT FILLER WITH POLYETHYLENE TAPE.

1B TYPICAL WALL EXPANSION JOINT AT EXISTING CONSTRUCTION
1/2" = 1'-0"

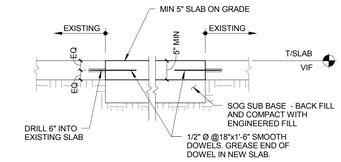


SECTION A-A

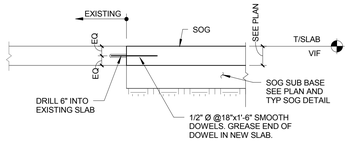


NOTES:
1. INSTALL UNDERPINNING IN 3 PLACEMENTS AS SHOWN.
2. AFTER EXCAVATION OF PLACEMENT "1" SECTIONS, THOROUGHLY CLEAN UNDERSIDE OF EXISTING FOOTING.
3. FORM AND POUR FIRST PLACEMENT, LEAVING 3" MIN SPACE UNDER EXISTING FOOTING FOR GROUTING.
4. REMOVE DIRT, LAITANCE, OIL, GREASE, ETC FROM BOTH NEW AND OLD SURFACES. BRING SURFACES TO A SATURATED SURFACE DRY (SSD) CONDITION.
5. ONCE CONCRETE HAS REACHED 3000 PSI, COMPLETELY PACK VOID SPACE WITH LOW SLUMP NON-SHRINK GROUT.
6. ONCE GROUT HAS REACHED 3,000 PSI, PLACEMENT "1" IS COMPLETE.
7. REPEAT ABOVE OPERATIONS FOR PLACEMENT "2" AND "3".
8. MATERIAL PROPERTIES: CONCRETE FILL = 4000 PSI. NON-SHRINK GROUT = 3,000 PSI AT 3 DAYS

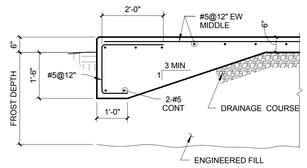
1E TYPICAL WALL FOOTING UNDERPINNING DETAIL
1/2" = 1'-0"



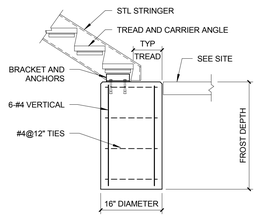
2A SLAB ON GRADE TRENCH INFILL
1/2" = 1'-0"



2B SLAB ON GRADE JOINT AT EXISTING SLABS
1/2" = 1'-0"



2C TYPICAL SITE PAD DETAIL
1/2" = 1'-0"

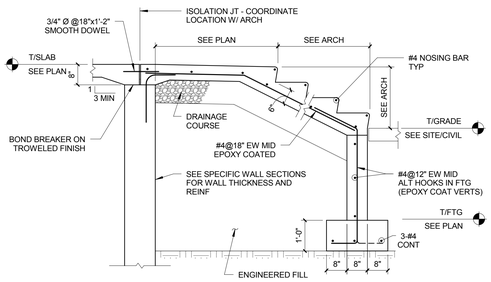


NOTES:
1. SEE ARCHITECTURAL DRAWINGS FOR STAIR LOCATION AND RISER/TREAD CONFIGURATION.
2. FOOTING LENGTH = STAIR WIDTH + 12 INCHES.

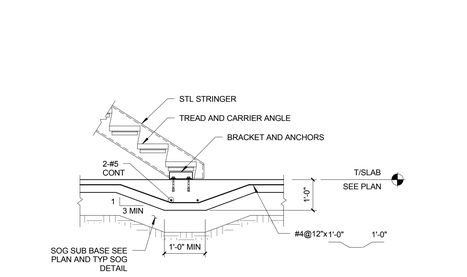
2E TYPICAL EXTERIOR STAIR STRINGER FOUNDATION
1/2" = 1'-0"

NOTES:
1. ALIGN BOTTOM OF NEW AND EXISTING FOOTINGS. STEP FOOTING AND WALL AS REQUIRED PER TYPICAL DETAILS.
2. EXTEND NEW FOUNDATIONS DOWN TO THE MINIMUM DEPTH.

1F TYPICAL FOUNDATION WALL AT EXISTING
1/2" = 1'-0"

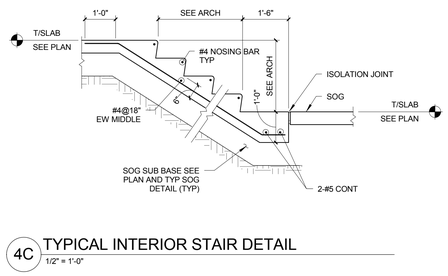


2F TYPICAL EXTERIOR STAIR DETAIL
1/2" = 1'-0"

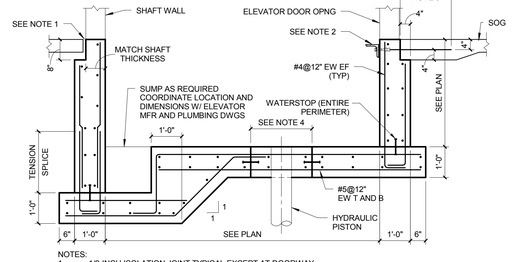


NOTES:
1. SEE ARCH DRAWINGS FOR STAIR LOCATION AND RISER/TREAD CONFIGURATION.
2. THICKENED SLAB LENGTH = STAIR WIDTH + 12 INCHES.

4B INTERIOR STAIR STRINGER FOUNDATION
1/2" = 1'-0"

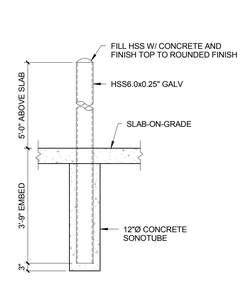


4C TYPICAL INTERIOR STAIR DETAIL
1/2" = 1'-0"

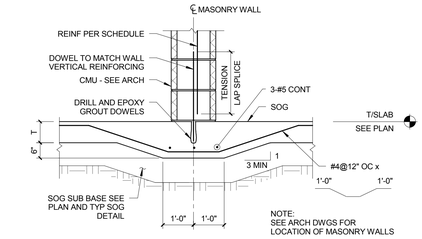


NOTES:
1. 1/2-INCH ISOLATION JOINT TYPICAL EXCEPT AT DOORWAY.
2. STEEL SHAPE FOR SUBSILLS TO BE COORDINATED W/ APPROVED ELEVATOR MANUFACTURER.
3. #4@12"x2'-0" DRILLED AND GROUTED 4 INCHES INTO CONCRETE WALL AT DOOR OPENINGS.
4. HYDRAULIC PISTON BOX OUT WITH CONTINUOUS WATERSTOP. ROUGHEN FIRST POUR TO 1/4 INCH AMPLITUDE OR FORM WITH A STAY-IN-PLACE PERFORATED METAL BULKHEAD TO ACHIEVE THE SAME RESULT.

4E TYPICAL ELEVATOR PIT DETAIL
1/2" = 1'-0"

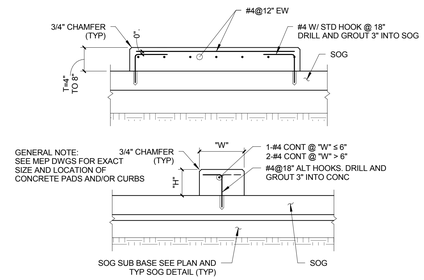


4F TYPICAL BOLLARD DETAIL
1/2" = 1'-0"

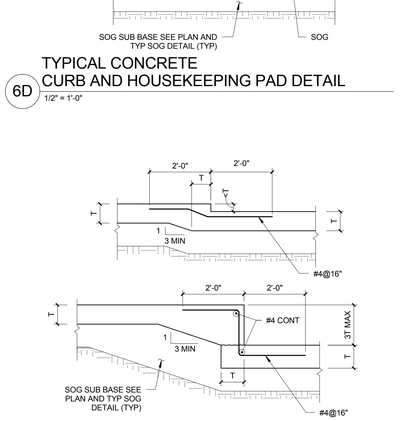


NOTE:
SEE ARCH DWGS FOR LOCATION OF MASONRY WALLS

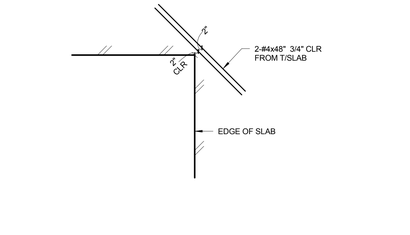
6B TYPICAL THICKENED SLAB UNDER NON-BEARING MASONRY WALLS
1/2" = 1'-0"



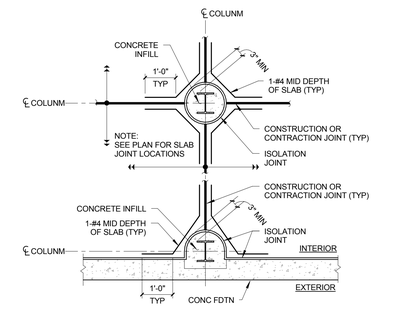
6D TYPICAL CONCRETE CURB AND HOUSEKEEPING PAD DETAIL
1/2" = 1'-0"



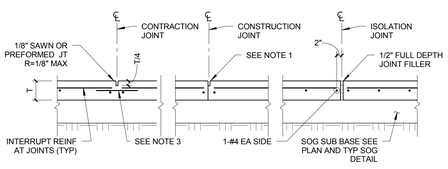
6E TYPICAL SLAB-ON-GRADE DEPRESSIONS
1/2" = 1'-0"



8B ADDITIONAL REINFORCING AT CORNERS IN SLAB-ON-GRADE
1/2" = 1'-0"

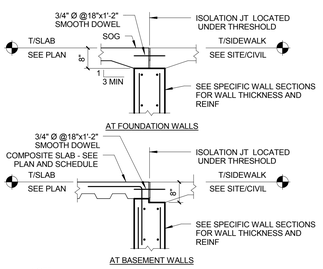


8C SLAB-ON-GRADE ISOLATION JOINT AT COLUMNS
1/2" = 1'-0"



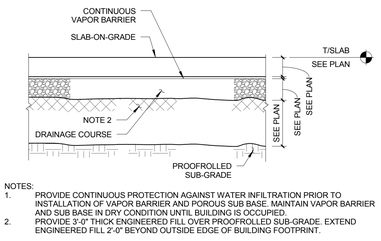
NOTES:
1. LOCATE CONSTRUCTION JOINTS AT CONTRACTION JOINT LOCATIONS SHOWN ON PLAN. MATCH CONTRACTION JOINT PROFILE.
2. MAXIMUM SPACING BETWEEN CONTRACTION JOINTS = 15'-0". SEE PLAN FOR LOCATIONS.
3. 3/4" x 1'-4" SMOOTH DOWEL AT 18 INCHES ON CENTER. SET AT T/2 BELOW TOP OF SLAB. GREASE ONE END.
4. DO NOT PLACE DOWELS WITHIN 12" OF A SLAB CORNER.

8E TYPICAL SLAB ON GRADE JOINTS
1/2" = 1'-0"



NOTE
1. BACKFILL WITH ENGINEERED FILL AT DOORWAYS

6F TYPICAL FOUNDATION DETAIL AT DOORWAYS
1/2" = 1'-0"



NOTES:
1. PROVIDE CONTINUOUS PROTECTION AGAINST WATER INFILTRATION PRIOR TO INSTALLATION OF VAPOR BARRIER AND POROUS SUB BASE. MAINTAIN VAPOR BARRIER AND SUB BASE IN DRY CONDITION UNTIL BUILDING IS OCCUPIED.
2. PROVIDE 2'-0" THICK ENGINEERED FILL OVER PROOFROLLED SUB-GRADE. EXTEND ENGINEERED FILL 2'-0" BEYOND OUTSIDE EDGE OF BUILDING FOOTPRINT.

8F TYPICAL SLAB ON GRADE
1/2" = 1'-0"

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions:	Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

SidePlate
Steel Frame
25909 Pala, Ste 200, 92691
Mission Viejo, CA
949.305.7889

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

ARCHITECT/ENGINEERS:

CANNONDESIGN

1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.6250
F: 314.241.2570

Drawing Title: **TYPICAL FOUNDATION DETAILS**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **RS** | Drawn: **JW**

Project Number: **657-351** (CANNON DESIGN PROJECT NO. 03850.05)

Building Number

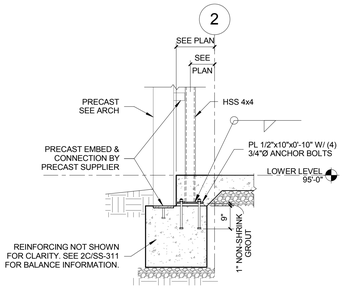
Drawing Number: **SS-302**

Dwg. of

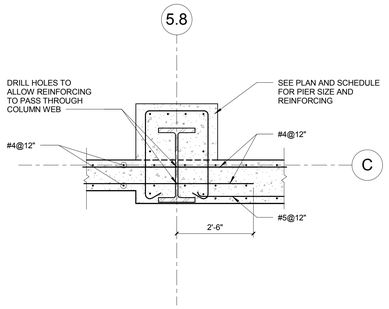
Office of Construction and Facilities Management

Department of Veterans Affairs

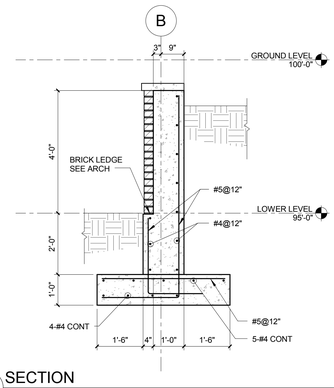
VA FORM 08-6231



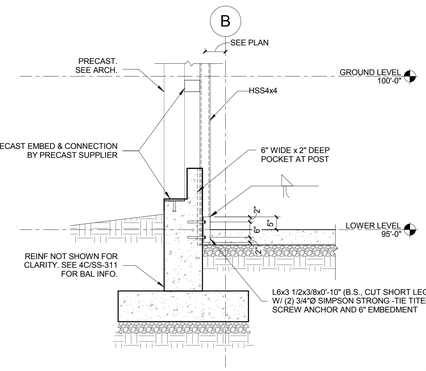
1A SECTION
1/2" = 1'-0"



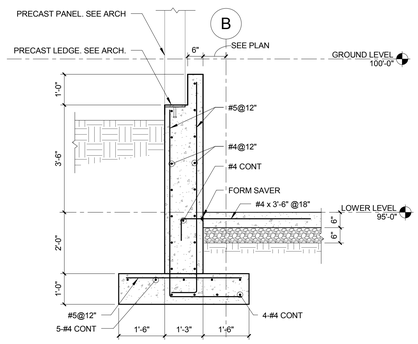
1C PIER DETAIL AT COLUMN C-5.8
1/2" = 1'-0"



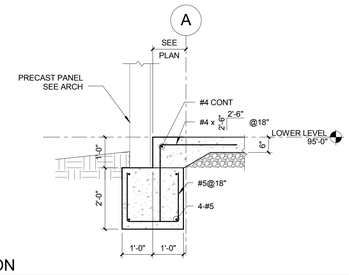
1E SECTION
1/2" = 1'-0"



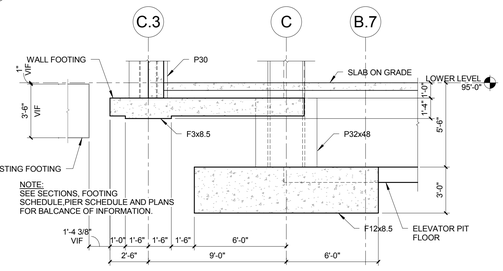
1F SECTION
1/2" = 1'-0"



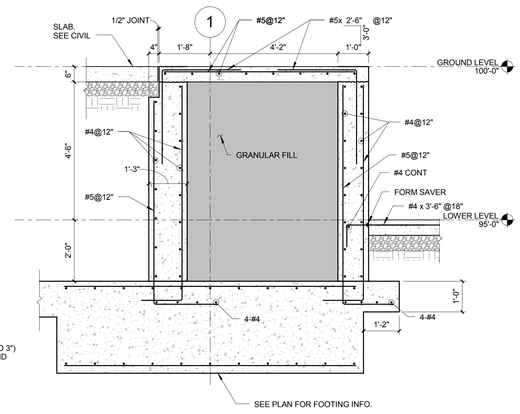
2B SECTION
1/2" = 1'-0"



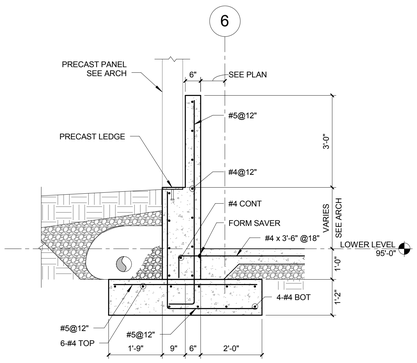
2C SECTION
1/2" = 1'-0"



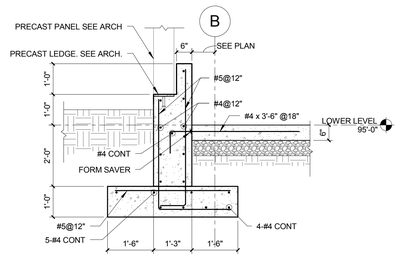
2D SECTION
1/4" = 1'-0"



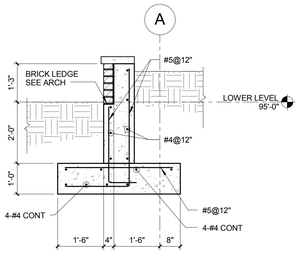
2F SECTION
1/2" = 1'-0"



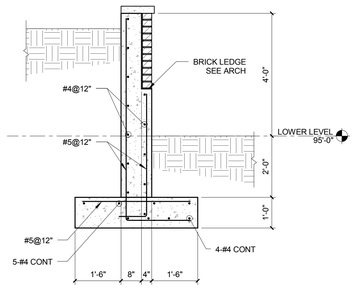
4B SECTION
1/2" = 1'-0"



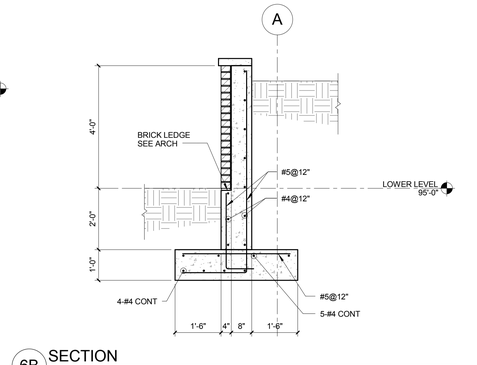
4C SECTION
1/2" = 1'-0"



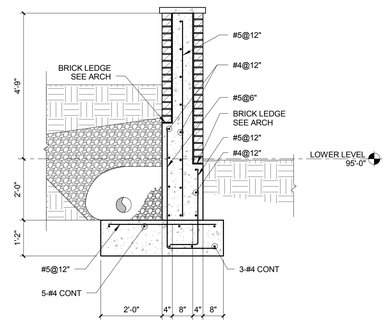
4E SECTION
1/2" = 1'-0"



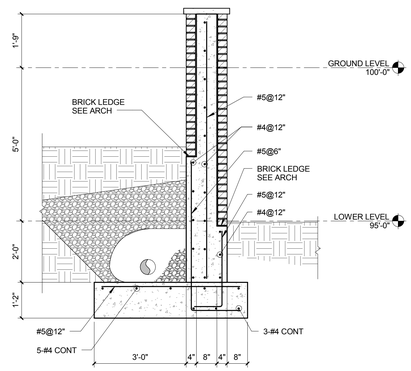
4F SECTION
1/2" = 1'-0"



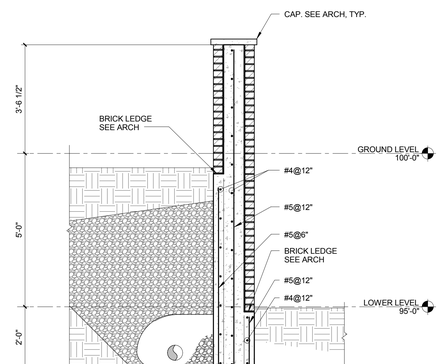
6B SECTION
1/2" = 1'-0"



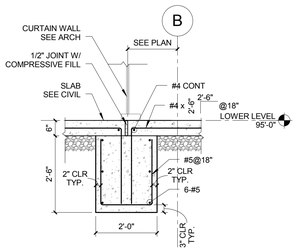
6D SECTION
1/2" = 1'-0"



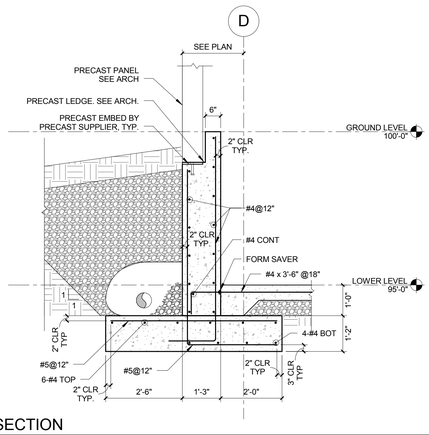
6F SECTION
1/2" = 1'-0"



8C SECTION
1/2" = 1'-0"



8D SECTION
1/2" = 1'-0"



8F SECTION
1/2" = 1'-0"

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions:	Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

SidePlate
Steel Frame
25909 Pala, Ste 200, 92691
Mission Viejo, CA
949.305.7889

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

ARCHITECT/ENGINEERS:

CANNONDESIGN

1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.6250
F: 314.241.2570

Drawing Title: **FOUNDATION DETAILS**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **RS** | Drawn: **JW**

Project Number: **657-351** (CANNON DESIGN PROJECT NO. 03650.05)

Building Number

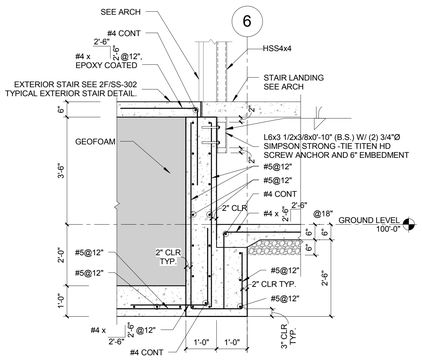
Drawing Number: **SS-311**

Dwg. of

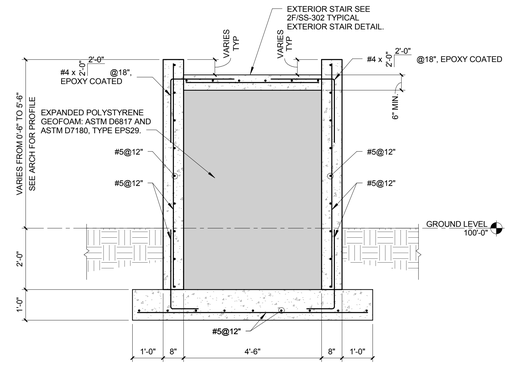
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231



7D SECTION
1/2" = 1'-0"



7F SECTION
1/2" = 1'-0"

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions:	Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

SidePlate
Steel Frame
25909 Pala, Ste 200, 92691
Mission Viejo, CA
949.305.7889

ARCHITECT/ENGINEERS:

CANNONDESIGN

Drawing Title: **FOUNDATION DETAILS**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **RS** | Drawn: **JW**

Project Number: **657-351** (CANNON DESIGN PROJECT NO. 03850.05)

Building Number

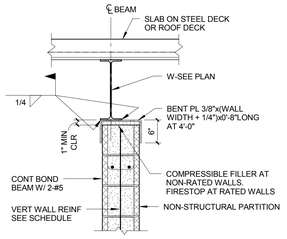
Drawing Number: **SS-312**

Dwg. of

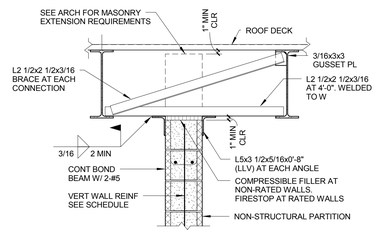
Office of Construction and Facilities Management

Department of Veterans Affairs

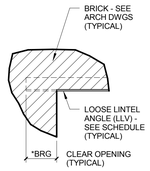
VA FORM 08-6231



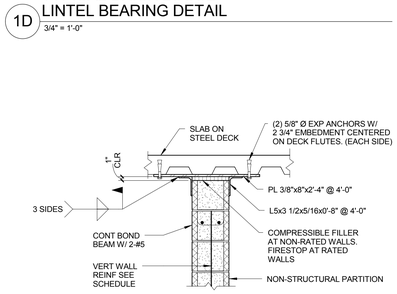
2B NON-STRUCTURAL PARTITION BRACE AT PARALLEL STEEL BEAMS
3/4" = 1'-0"



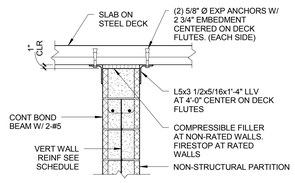
PARTITION PERPENDICULAR TO DECK SPAN



1D TYPICAL BRICK LOOSE LINTEL BEARING DETAIL
3/4" = 1'-0"

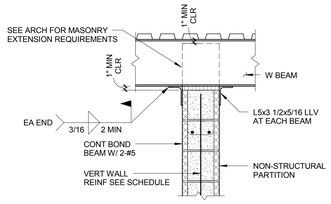


PARTITION PARALLEL TO DECK SPAN



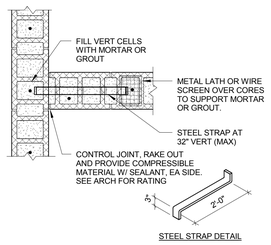
PARTITION PERPENDICULAR TO DECK SPAN

1F NON-STRUCTURAL PARTITON BRACE AT SLABS ON METAL DECK
3/4" = 1'-0"



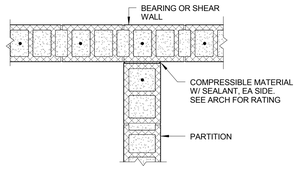
PARTITION PARALLEL TO DECK SPAN

2E NON-STRUCTURAL PARTITON BRACE AT ROOF DECKS WITH STEEL BEAMS
3/4" = 1'-0"



STEEL STRAP DETAIL

2F TYPICAL INTERSECTION OF STRUCTURAL MASONRY SHEAR WALLS
3/4" = 1'-0"



4B TYPICAL JOINT AT MASONRY PARTITIONS ABUTTING BEARING OR SHEAR WALLS
3/4" = 1'-0"

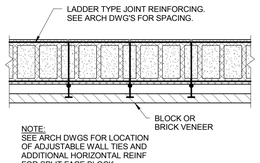
4" VENEER | 4" WALL | 6" AND 8" WALLS | 10" AND 12" WALLS

MASONRY STEEL LINTEL SCHEDULE

OPENING SIZE	4" VENEER	4" WALLS	6" WALLS	8" WALLS	10" WALLS	12" WALLS
3'-0"	L4x4x5/16	L3 1/2x3 1/2x1/4	2L3x2 1/2x1/4	2L3 1/2x3 1/2x1/4	3L3x3x1/4	3L3 1/2x3 1/2x1/4
4'-0"	L4x4x5/16	L4x3 1/2x1/4	2L3x2 1/2x1/4	2L4x3 1/2x1/4	3L4x3x1/4	3L4x3 1/2x1/4
5'-0"	L4x4x5/16	L4x3 1/2x1/4	2L3 1/2x2 1/2x1/4	2L4x3 1/2x1/4	3L4x3x1/4	3L4x3 1/2x1/4
6'-0"	L6x4x3/8	L5x3 1/2x1/4	WT 7x13	2L5x3 1/2x1/4	3L5x3x1/4	3L5x3 1/2x1/4
8'-0"	L7x4x7/16	L6x3 1/2x5/16	WT 8x15.5	2L6x3 1/2x3/8	3L5x3x3/8	3L6x3 1/2x3/8

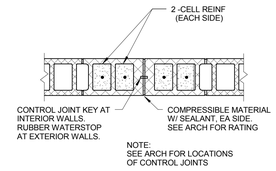
NOTES:
1. PROVIDE LINTEL FOR MASONRY OPENINGS IN ACCORDANCE WITH THIS SCHEDULE UNLESS OTHERWISE NOTED
2. LINTELS THAT ARE PART OF EXTERIOR WALL ASSEMBLIES SHALL HAVE A MINIMUM THICKNESS OF 5/16" AND BE HOT DIP GALVANIZED.
3. SET LINTELS WITH LONG LEG VERTICAL AND WITH 8 INCHES OF BEARING EACH END.
4. WELD ADJOINING ANGLES TO FORM A SINGLE UNIT.

4D MASONRY STEEL LOOSE LINTEL SCHEDULE
3/4" = 1'-0"



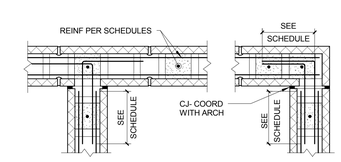
NOTE:
SEE ARCH DWGS FOR LOCATION OF ADJUSTABLE WALL TIES AND ADDITIONAL HORIZONTAL REINF FOR SPLIT FACE BLOCK.

4E TYPICAL JOINT REINFORCING AT VENEER WALLS
3/4" = 1'-0"



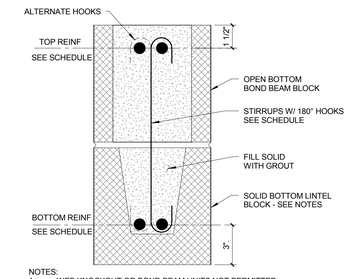
NOTE:
SEE ARCH FOR LOCATIONS OF CONTROL JOINTS

4F TYPICAL MASONRY CONTROL JOINT DETAIL
3/4" = 1'-0"



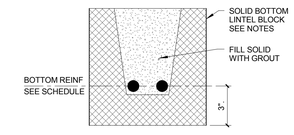
INTERSECTION | CORNERS

6B TYPICAL STRUCTURAL BOND BEAM
3/4" = 1'-0"



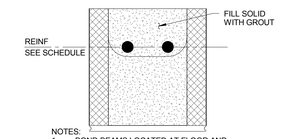
NOTES:
1. WEB KNOCKOUT OR BOND BEAM UNITS NOT PERMITTED.
2. 16" DEPTH INDICATED. ADD ADDITIONAL OPEN BOTTOM BLOCKS AS NECESSARY TO ACHIEVE SCHEDULED DEPTH.

6D TYPICAL MULTIPLE BLOCK CMU LINTEL REINFORCING DETAIL
3" = 1'-0"



NOTE:
1. WEB KNOCKOUT UNITS NOT PERMITTED.

6C TYPICAL SINGLE BLOCK CMU LINTEL REINFORCING DETAIL
3" = 1'-0"



NOTES:
1. BOND BEAMS LOCATED AT FLOOR AND ROOF LEVELS TO HAVE REINFORCING CONTINUOUS THROUGH CONTROL JOINTS. INTERMEDIATE BOND BEAMS TO HAVE HORIZONTAL REINFORCING DISCONTINUOUS AT CONTROL JOINTS.
2.

6F TYPICAL BOND BEAM REINFORCING DETAIL
3" = 1'-0"

STRUCTURAL REINFORCED CMU LINTEL SCHEDULE
(ARCHING ACTION PRESENT)

OPENING SIZE	BLOCK SIZE	LINTEL DEPTH	REINFORCING		
			BOTTOM	TOP	STIRRUPS
4'-0 - 5'-0"	8"	8"	(2) #6		
5'-1" - 6'-0"	8"	8"	(2) #7		
6'-1" - 8'-0"	8"	16"	(2) #8		
4'-0 - 5'-0"	10"	8"	(2) #6		
5'-1" - 6'-0"	10"	8"	(2) #7		
6'-1" - 8'-0"	10"	16"	(2) #8		
8'-1" - 12'-0"	10"	24"	(2) #8	(2) #8	#5@6"

8A REINFORCED CMU LINTEL SCHEDULE
3/4" = 1'-0"

STRUCTURAL REINFORCED MASONRY LAP SPLICES (f'm 1500 PSI)

REINFORCING SIZE	BLOCK SIZE W/ SINGLE BAR PER CELL				BLOCK SIZE W/ DOUBLE BAR PER CELL
	6"	8"	10"	12"	8"-12"
#3	16	16	16	16	12
#4	21	21	21	21	21
#5	32	26	26	26	32
#6	61	43	40	40	59
#7	-	60	46	46	81
#8	-	92	71	61	121
#9	-	-	90	73	153

NOTES:
1. LENGTH GIVEN IN INCHES.
2. FOR EPOXY BARS MULTIPLY SPLICE LENGTH BY 1.5

8B ALTERNATE MASONRY LAP SPLICE SCHEDULES
3/4" = 1'-0"

REINFORCED MASONRY LAP SPLICES (f'm = 1500 PSI and 2000 PSI)

REINFORCING SIZE	SPLICE LENGTH
#3	18
#4	24
#5	30
#6	36
#7	42
#8	48
#9	54

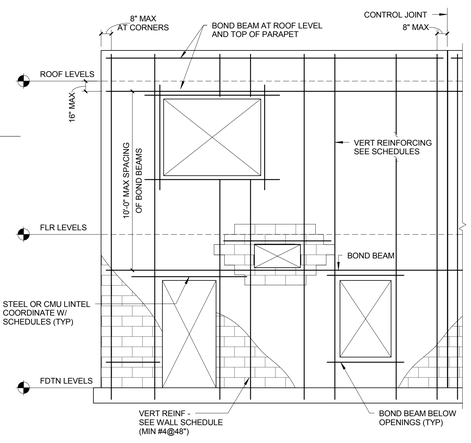
NOTES:
1. LENGTH GIVEN IN INCHES.
2. FOR EPOXY BARS MULTIPLY SPLICE LENGTH BY 1.5

8C TYPICAL MASONRY LAP SPLICE SCHEDULE
3/4" = 1'-0"

NON-STRUCTURAL REINFORCED MASONRY PARTITIONS

BLOCK SIZE	BOND BEAM		VERTICAL SIZE	SPACING (OC)
	MAXIMUM SPAN	REINFORCING		
8"	10'-0"	(2) #5	#5	32"
10"	10'-0"	(2) #6	(2) #6	32"
12"	10'-0"	(2) #6	(2) #6	32"

8D MASONRY REINFORCING SCHEDULES
3/4" = 1'-0"



8F MINIMUM MASONRY WALL REINFORCEMENT
1/4" = 1'-0"

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions:	Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

SidePlate
Steel Frame
25909 Pala, Ste 200, 92691
Mission Viejo, CA
949.305.7889

ARCHITECT/ENGINEERS:

CANNONDESIGN

1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.8250
F: 314.241.2570

Drawing Title: **TYPICAL MASONRY DETAILS**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **Checker** | Drawn: **Author**

Project Number: **657-351**
CANNON DESIGN PROJECT NO. 03850.05

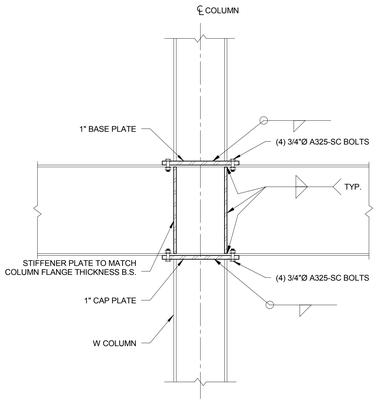
Building Number

Drawing Number: **SS-401**
Dwg. of

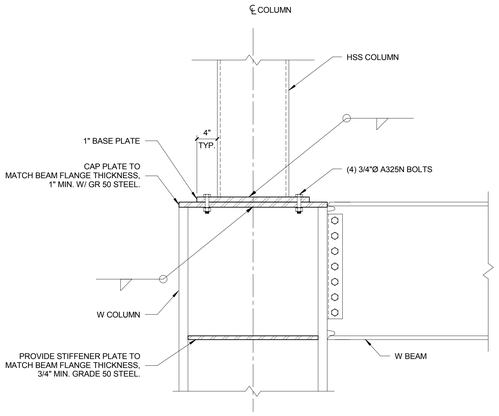
Office of Construction and Facilities Management

Department of Veterans Affairs

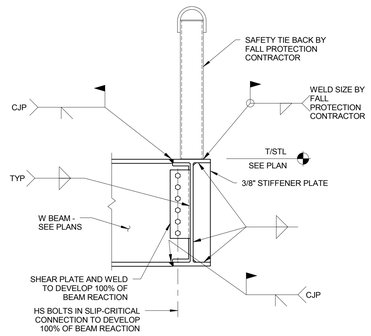
VA FORM 08-6231



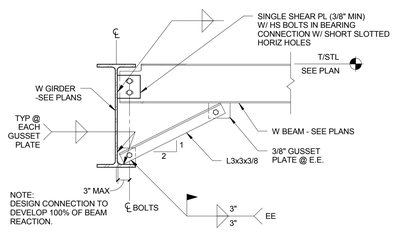
2C CONTINUOUS BEAM AT COLUMN DETAIL
3/4" = 1'-0"



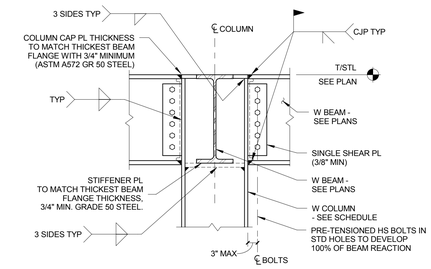
2E TYPICAL HSS COLUMN TO WIDE FLANGE COLUMN CONNECTION
1" = 1'-0"



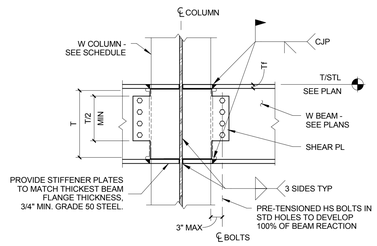
1F TYPICAL SAFETY TIE BACK TO BEAM CONNECTION DETAIL
3/4" = 1'-0"



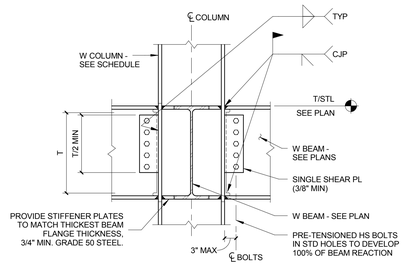
2F TYPICAL FRAMED BEAM CONNECTION AT BEAM CONTINUOUS OVER COLUMN
3/4" = 1'-0"



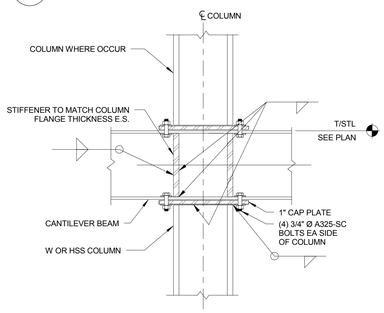
4B TYPICAL BEAM TO COLUMN FLANGE MOMENT CONNECTION AT ROOF
3/4" = 1'-0"



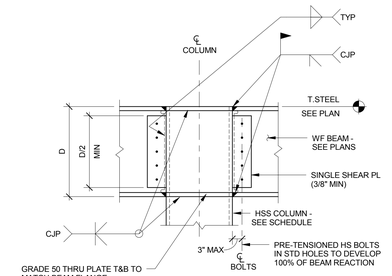
4C TYPICAL BEAM TO COLUMN WEB MOMENT CONNECTION
3/4" = 1'-0"



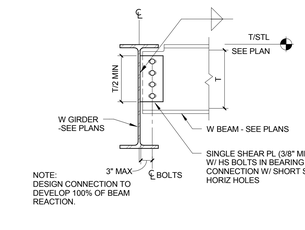
4E TYPICAL BEAM TO COLUMN FLANGE MOMENT CONNECTION
3/4" = 1'-0"



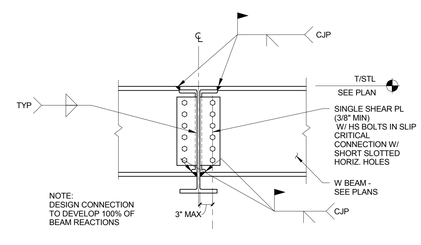
4F CONTINUOUS BEAM OVER TOP OF COLUMN DETAIL
3/4" = 1'-0"



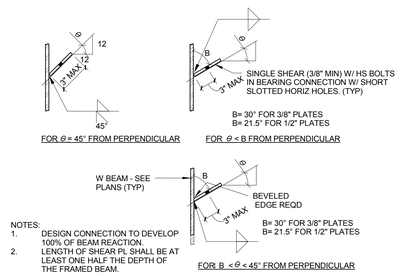
6B TYPICAL THROUGH-PLATE MOMENT CONNECTION AT HSS/PIPE COLUMN
3/4" = 1'-0"



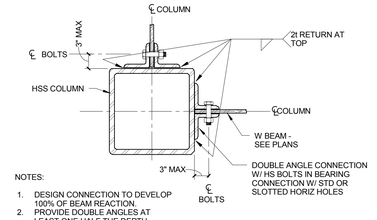
6C TYPICAL FRAMED BEAM CONNECTION
3/4" = 1'-0"



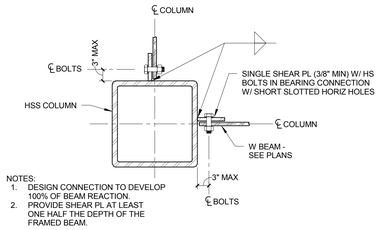
6E TYPICAL BEAM TO BEAM MOMENT CONNECTION
3/4" = 1'-0"



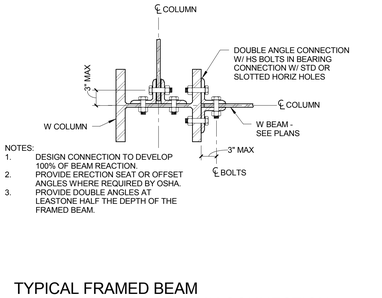
6F TYPICAL SKEWED FRAMED BEAM CONNECTION
3/4" = 1'-0"



8B TYPICAL FRAMED BEAM TO HSS COLUMN CONNECTION - HSS FACE DIM > 8"
3/4" = 1'-0"



8C TYPICAL FRAMED BEAM TO HSS COLUMN CONNECTION - HSS FACE DIM <8"
3/4" = 1'-0"



8F TYPICAL FRAMED BEAM TO WIDE FLANGE COLUMN CONNECTION
3/4" = 1'-0"

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions:	Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

SidePlate
Steel Frame
25909 Pala, Ste 200, 92691
Mission Viejo, CA
949.305.7889

ARCHITECT/ENGINEERS:

CANNONDESIGN

1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.6250
F: 314.241.2570

Drawing Title: **TYPICAL STEEL FRAMED DETAILS**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **RS** | Drawn: **JW**

Project Number: **657-351** (CANNON DESIGN PROJECT NO. 03850.05)

Building Number

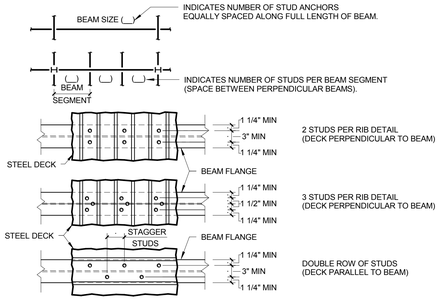
Drawing Number: **SS-501**

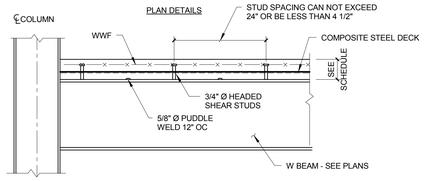
Dwg. of

Office of Construction and Facilities Management

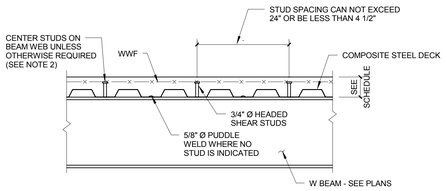
Department of Veterans Affairs

VA FORM 08-6231



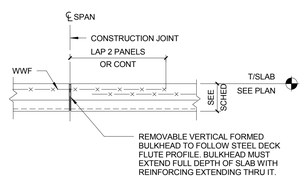


NOTES:
1. SPACE STUDS EQUALLY WITHIN BEAM SEGMENT. WHERE STUD SPACING EXCEEDS 24 INCHES, PROVIDE ADDITIONAL STUDS AS NECESSARY TO MAINTAIN A 24 INCH MAXIMUM STUD SPACING.
2. PLACE STUDS IN SINGLE ROW UNLESS NUMBER OF STUDS RESULTS IN SPACING LESS THAN 4 1/2 INCHES. WHERE SPACING WOULD BE LESS THAN 4 1/2 INCHES, PROVIDE A DOUBLE ROW OF STUDS IN A STAGGERED PATTERN RATHER THAN SIDE BY SIDE.
3. MAINTAIN TRANSVERSE SPACING BETWEEN STUDS AND EDGE DIMENSIONS AS SHOWN ON PLAN DETAILS ABOVE.

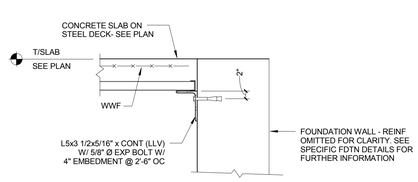


NOTES:
1. SPACE STUDS AS EVENLY AS POSSIBLE IN AVAILABLE DECK FLUTES. WHERE STUD SPACING EXCEEDS 24 INCHES, PROVIDE ADDITIONAL STUDS AS NECESSARY TO MAINTAIN A 24 INCH MAXIMUM STUD SPACING.
2. WHERE THE NUMBER OF STUDS EXCEEDS THE NUMBER OF FLUTES, INSTALL REMAINING STUDS IN DOUBLE OR TRIPLE ROW, STARTING FROM THE BEAM ENDS AND WORKING TOWARD THE CENTER.
3. WHERE BEAM FLANGE THICKNESS IS LESS THAN 0.30", STUDS MUST BE PLACED AT CENTERLINE OF THE BEAM.
4. MAINTAIN TRANSVERSE SPACING BETWEEN STUDS AND EDGE DIMENSIONS AS SHOWN ON PLAN DETAILS ABOVE.

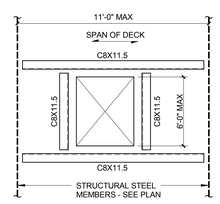
1F SHEAR CONNECTOR PLACEMENT DIAGRAMS
3/4" = 1'-0"



2B TYPICAL WELDED WIRE FABRIC REINFORCED COMPOSITE SLAB CONSTRUCTION JOINT
3/4" = 1'-0"

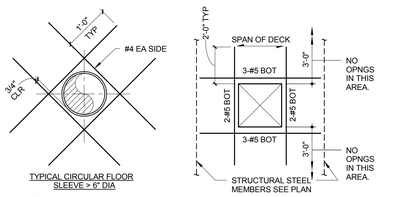


2D TYPICAL STEEL DECK SUPPORT AT FOUNDATION WALL
3/4" = 1'-0"



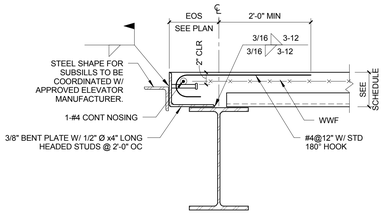
NOTES:
1. COORDINATE EXACT SIZE AND LOCATION OF OPENINGS W/ ARCH AND MEP REQUIREMENTS.
2. GROUPS OF CLOSELY SPACED OPENINGS ARE TO BE FRAMED AS A SINGLE LARGE OPENING.

2E TYPICAL FRAMING AT OPENINGS IN SLAB ON STEEL DECK AND ROOF DECK
3/4" = 1'-0"

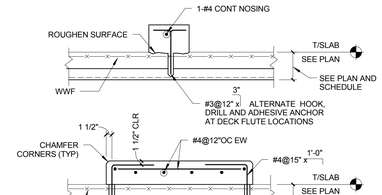


NOTES:
1. MAXIMUM CIRCULAR OPENING SIZE = 1'-4" DIA.
2. MAXIMUM RECTANGULAR OPENING SIZE = 2'-0"
3. CUT DECK AFTER CONC REACHES F'C = 3000 PSI
4. COORDINATE EXACT SIZE AND LOCATION OF OPENINGS W/ ARCH AND MEP REQUIREMENTS
5. GROUPED OPENINGS ARE NOT TO EXCEED DIMENSIONS NOTED

2F TYPICAL REINFORCED OPENINGS IN SLAB ON STEEL DECK
3/4" = 1'-0"

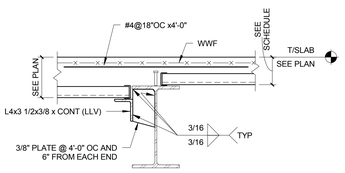


4B SLAB EDGE AT ELEVATOR SILL DETAIL
3/4" = 1'-0"

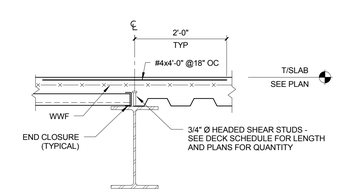


GENERAL NOTE:
SEE MEP DWGS FOR EXACT SIZE AND LOCATION OF CONCRETE PADS AND/OR CURBS

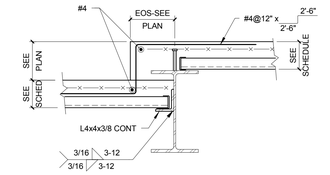
4D TYPICAL HOUSEKEEPING PAD AND CURB AT SLAB ON STEEL DECK DETAIL
3/4" = 1'-0"



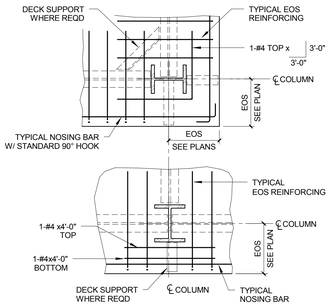
4E TYPICAL SLAB THICKNESS CHANGE
3/4" = 1'-0"



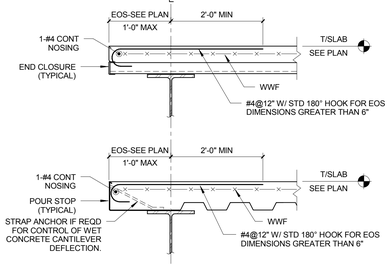
4F TYPICAL SLAB CONDITION WHERE STEEL DECK CHANGES DIRECTION
3/4" = 1'-0"



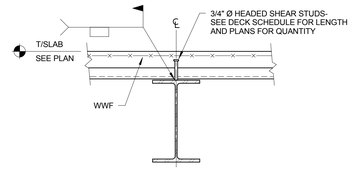
6B TYPICAL SLAB STEP DETAIL
3/4" = 1'-0"



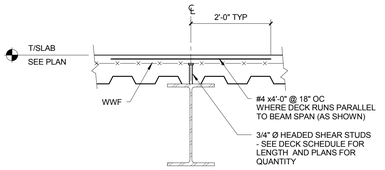
6D TYPICAL SLAB REINFORCING AT PERIMETER COLUMNS
3/4" = 1'-0"



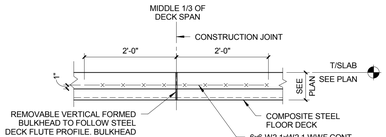
6E TYPICAL NON-SPANDREL EDGE OF SLAB DETAILS
3/4" = 1'-0"



6F TYPICAL SLAB AND COMPOSITE BEAM DETAIL
3/4" = 1'-0"



8B TYPICAL SLAB AND COMPOSITE BEAM DETAIL
3/4" = 1'-0"



NOTES:
1. WWF IS REQUIRED TO BE CONT THRU CONST JOINTS.
2. DETAIL IS SIMILAR AT ALL DECK ORIENTATIONS.

8D TYPICAL BLENDED FIBER REINFORCED COMPOSITE SLAB CONSTRUCTION JOINT
3/4" = 1'-0"

STEEL ROOF DECK SCHEDULE

MARK	Minimum Steel Deck Properties: Deck Type	Gage	I in4	Sp in³	Sn in³	GALV	Remarks
RD03	3" Type N	18	1.190	0.680	0.740	G90	

ROOF DECK NOTES:
1 SEE PLANS FOR LOCATION OF DECK MARKS.
2 PERIMETER FASTENING TO BE EQUAL TO SUPPORT FASTENING ALL AROUND.

STEEL ROOF DECK LEGEND
ROOF DECK MARK → RD0_ XX/Y"#
FASTENER PATTERN (5/8" DIA PUDDLE WELD)
NUMBER OF 1 1/2" FILLET WELD SIDELAP FASTENERS PER SPAN

8E ROOF DECK SCHEDULE AND NOTES
3/4" = 1'-0"

COMPOSITE SLAB SCHEDULE

MARK	Total Slab Thickness	Minimum Steel Deck Properties: Deck Type	Gage	I in4	Sp in³	Sn in³	GALV	Concrete Properties: F'c	Unit Weight (PCF)	Shear Stud Length
FD04	6 1/2"	2"	20	0.420	0.367	0.387	G60	3000	145	5"

COMPOSITE SLAB SCHEDULE NOTES:
1. SEE PLANS FOR LOCATION OF DECK MARKS. DECK SHALL BE GRADE 50 STEEL.
2. PERIMETER FASTENING TO BE EQUAL TO SUPPORT FASTENING ALL AROUND. FASTEN DECK TO SUPPORT FRAMING WITH 5/8" DIA PUDDLE WELD OR STUD SHEAR CONNECTOR @ 12" O.C. MAX.
3 REINFORCE DECK WITH 4x4-W4.5xW4.5, WWF.
4. SIDELAPS AT 36" OC MAX. WITH NO. 12 SCREW OR 1 1/2" LONG FILLET WELD.

8F COMPOSITE SLAB SCHEDULE AND NOTES
3/4" = 1'-0"

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions:	Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

SidePlate
Steel Frame
25909 Pala, Ste 200, 92691
Mission Viejo, CA
949.305.7889

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

ARCHITECT/ENGINEERS:

CANNONDESIGN
1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.8250
F: 314.241.2570

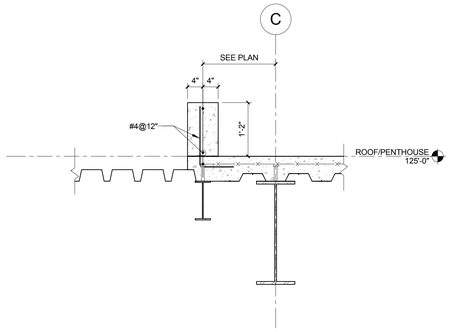
Drawing Title: **TYPICAL STEEL DECK DETAILS**
Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**
Location: **Poplar Bluff, Missouri**
Date: **DEC 14, 2015** | Checked: **RS** | Drawn: **JW**

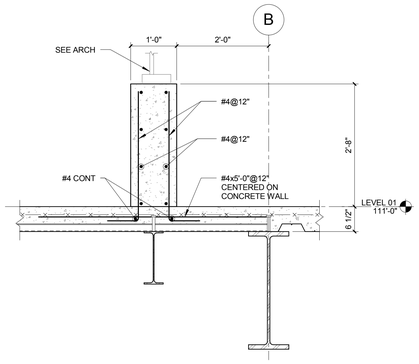
Project Number: **657-351** (CANNON DESIGN PROJECT NO. 03850.05)
Building Number
Drawing Number: **SS-502**
Dwg. of

Office of Construction and Facilities Management
Department of Veterans Affairs

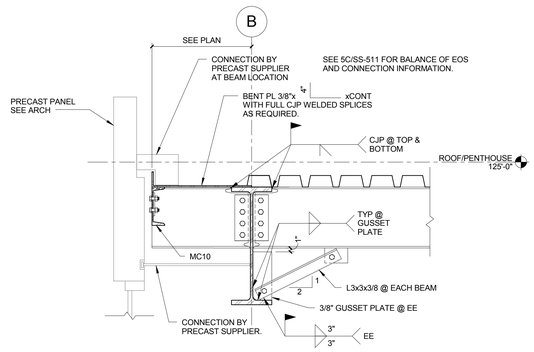
VA FORM 08-6231



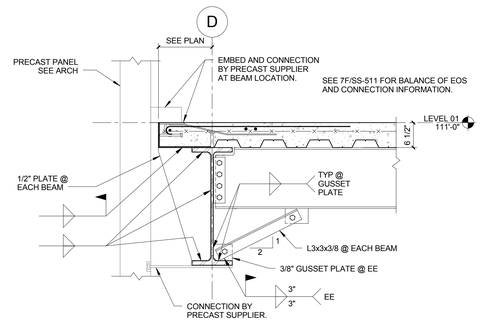
1B SECTION
3/4" = 1'-0"



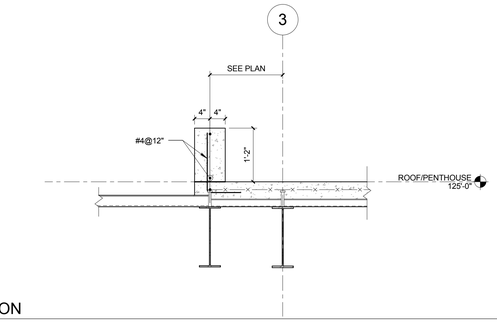
3B SECTION
3/4" = 1'-0"



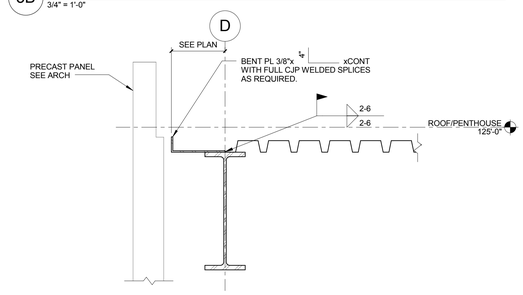
5B SECTION
3/4" = 1'-0"



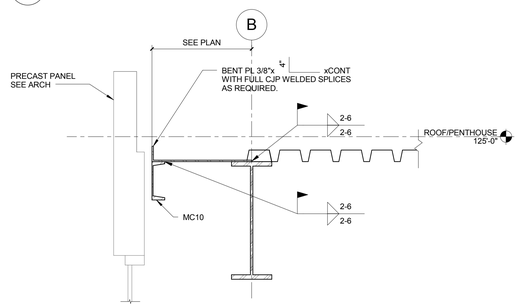
7B SECTION
3/4" = 1'-0"



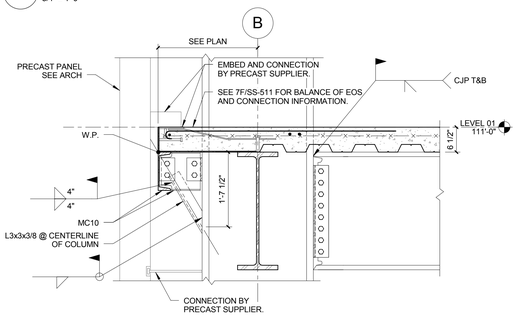
1C SECTION
3/4" = 1'-0"



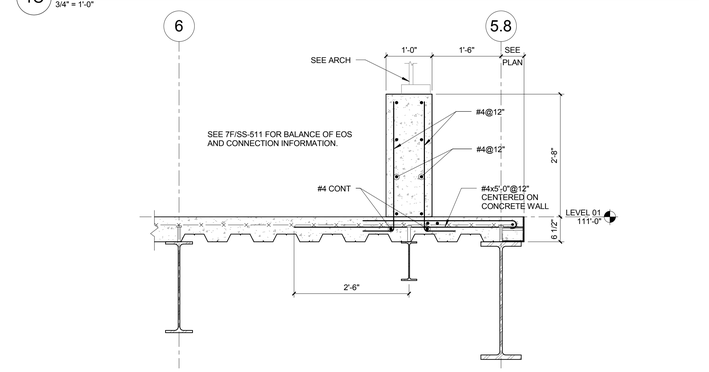
3C SECTION
3/4" = 1'-0"



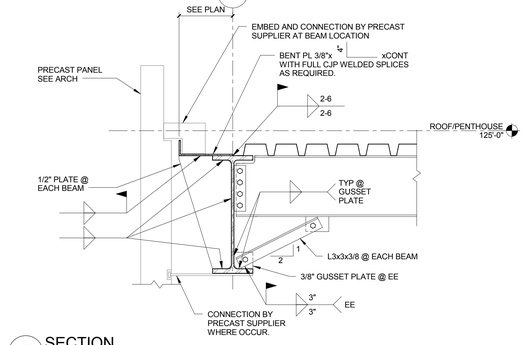
5C SECTION
3/4" = 1'-0"



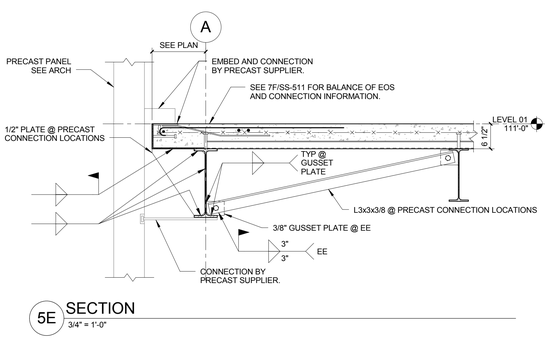
7C SECTION
3/4" = 1'-0"



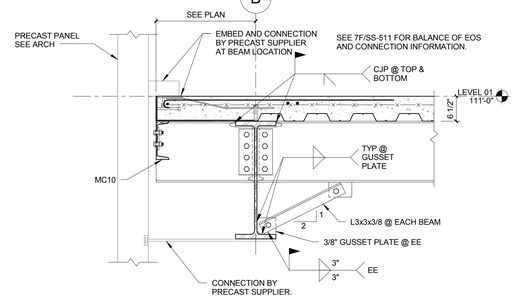
1E SECTION
3/4" = 1'-0"



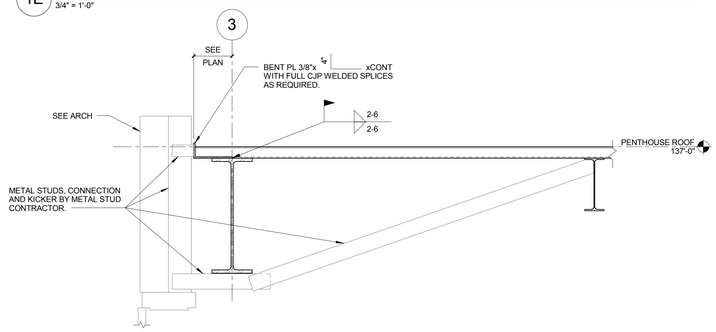
3E SECTION
3/4" = 1'-0"



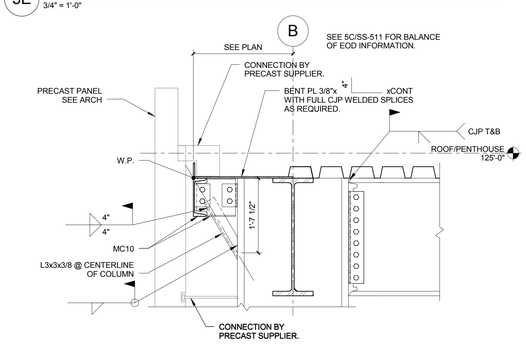
5E SECTION
3/4" = 1'-0"



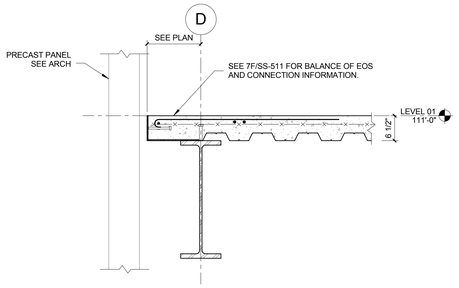
7E SECTION
3/4" = 1'-0"



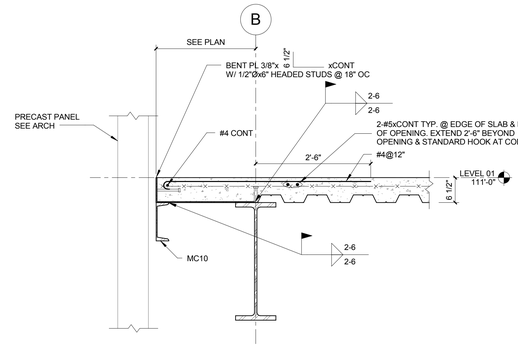
1F SECTION
3/4" = 1'-0"



3F SECTION
3/4" = 1'-0"



5F SECTION
3/4" = 1'-0"



7F SECTION
3/4" = 1'-0"

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions:	Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

SidePlate
Steel Frame
25909 Pala, Ste 200, 92691
Mission Viejo, CA
949.305.7889

ARCHITECT/ENGINEERS:

CANNONDESIGN

1100 Clark Avenue
St. Louis, Missouri 63102
T: 314.241.6250
F: 314.241.2570

Drawing Title: **STEEL DETAILS**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **RS** | Drawn: **dow**

Project Number: **657-351**
CANNON DESIGN PROJECT NO. 03850.05

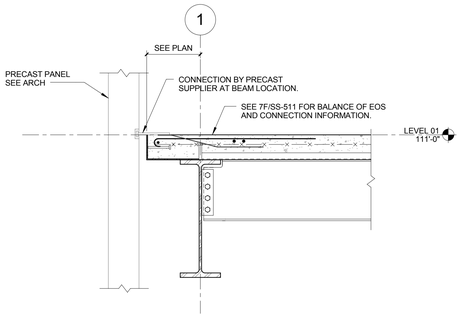
Building Number

Drawing Number: **SS-511**
Dwg. of

Office of Construction and Facilities Management

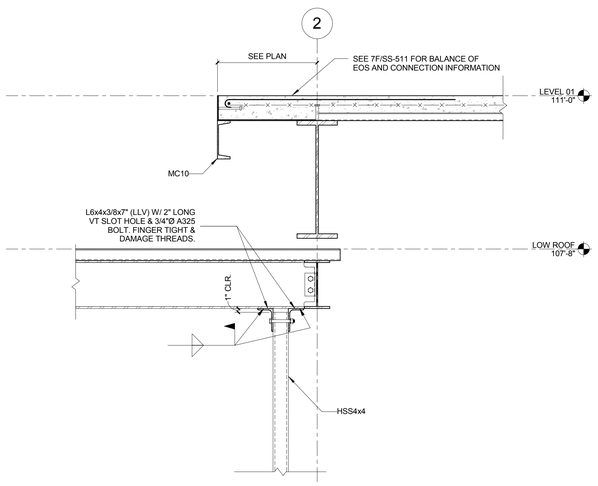
Department of Veterans Affairs

VA FORM 08-6231

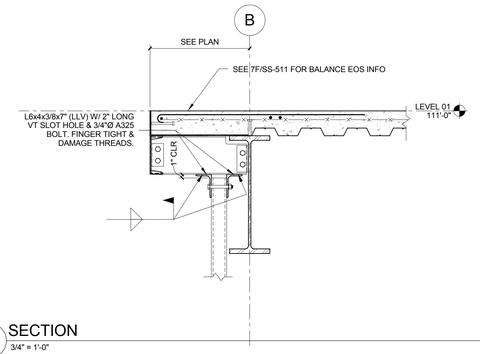


1D SECTION
3/4" = 1'-0"

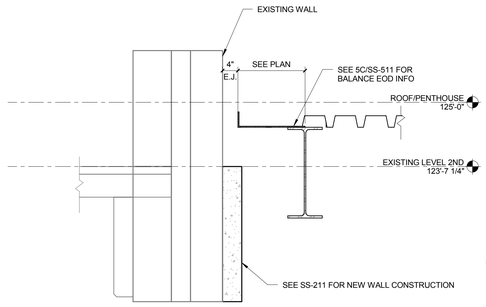
3C SECTION
3/4" = 1'-0"



4B SECTION
3/4" = 1'-0"

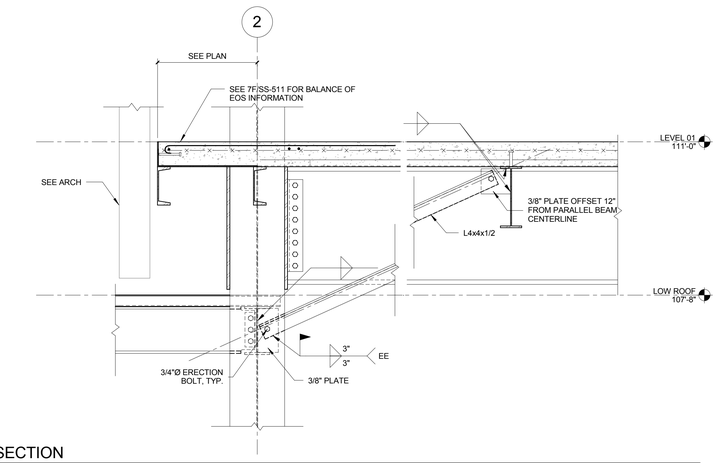


7B SECTION
3/4" = 1'-0"

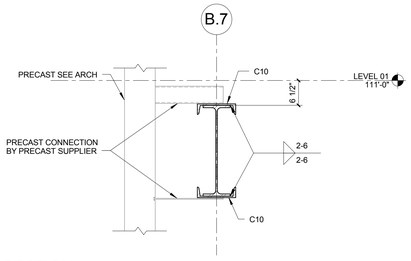


1E SECTION
3/4" = 1'-0"

3D SECTION
3/4" = 1'-0"

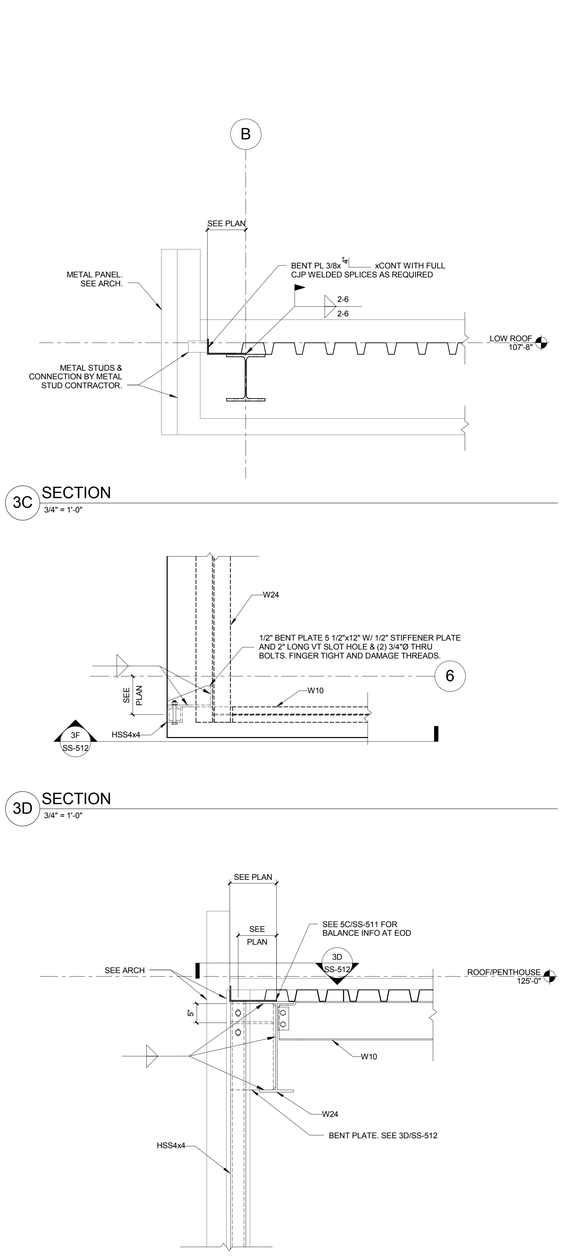


4D SECTION
3/4" = 1'-0"

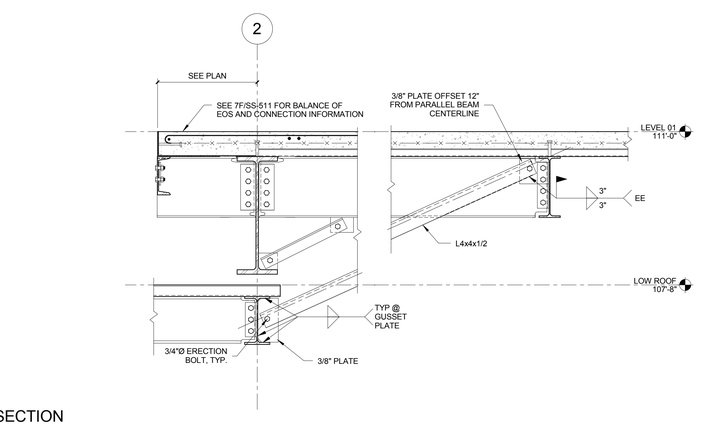


7D SECTION
3/4" = 1'-0"

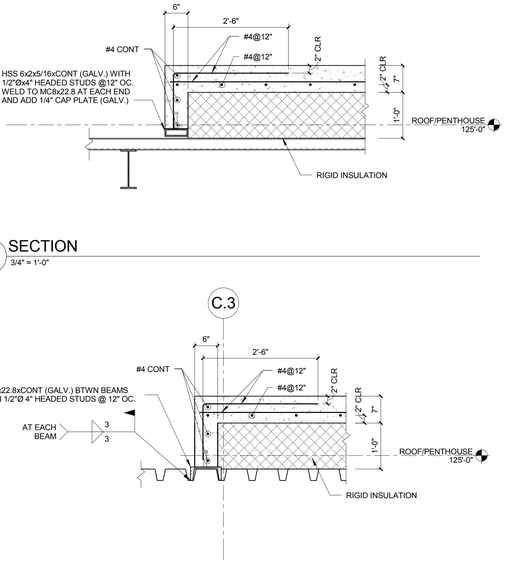
1F SECTION
3/4" = 1'-0"



3F SECTION
3/4" = 1'-0"



4F SECTION
3/4" = 1'-0"



7E SECTION
3/4" = 1'-0"

7F SECTION
3/4" = 1'-0"

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions:	Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

SidePlate
Steel Frame
25909 Pala, Ste 200, 92691
Mission Viejo, CA
949.305.7889

ARCHITECT/ENGINEERS:

CANNONDESIGN

Drawing Title: **STEEL DETAILS**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **RS** | Drawn: **JS**

Project Number: **657-351**
CANNON DESIGN PROJECT NO. 03850.05

Building Number

Drawing Number: **SS-512**
Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

Pages SS-601 through SS-606 depict the construction of SidePlate joints that meet the project's specification for Special Moment Frame (SMF) Performance Criteria. There is a licensing fee associated with this system that is to be paid by the winning steel fabricator and should be included in the steel fabrication bid. Other SMF connections may be possible, provided they meet the performance criteria outlined in the project specification.

INSTRUCTIONS TO STEEL FABRICATOR

1. **LICENSE REQUIREMENTS FOR THE USE OF SIDEPLATE® CONNECTION TECHNOLOGY ON John J. Pershing VAMC Clinical & Urgent Care Addition IN Poplar Bluff Missouri - SIDEPLATE PROJECT TRACKING NUMBER 14029-A-06**

   SIDEPLATE® LICENSE FEE:
   a. THE STEEL FABRICATOR'S BID PRICE FOR PROCUREMENT, FABRICATION AND ERECTION OF STRUCTURAL AND MISCELLANEOUS STEEL SHALL INCLUDE THE SIDEPLATE® LICENSE FEE FOR THE PROJECT. TO OBTAIN THE SIDEPLATE® LICENSE FEE, EACH PROSPECTIVE STEEL FABRICATOR WHO BIDS THE PROJECT SHALL CONTACT SIDEPLATE SYSTEMS, INC. BY ACCESSING THE SIDEPLATE WEBSITE (**http://www.sideplate.com/fee**) TO FORMALLY REQUEST THE SIDEPLATE® LICENSE FEE FOR THE PROJECT. IN THE UNLIKELY EVENT OF WEBSITE TECHNICAL DIFFICULTIES, PROSPECTIVE STEEL FABRICATORS MAY CONTACT SIDEPLATE SYSTEMS, INC. DIRECTLY VIA TELEPHONE TO REQUEST THAT THE SIDEPLATE® LICENSE FEE BE PROVIDED TO THEM VIA EMAIL.
   b. UPON THE SUCCESSFUL STEEL FABRICATOR SIGNING A CONTRACT TO FABRICATE STRUCTURAL STEEL FOR THIS PROJECT, THE STEEL FABRICATOR SHALL SUBMIT A PURCHASE ORDER (PO) TO SIDEPLATE SYSTEMS, INC. FOR THE TOTAL AMOUNT OF THE SIDEPLATE® LICENSE FEE AND, SHALL INCLUDE SAID FEE IN ITS FIRST CONSTRUCTION DRAW. THE CONTENT OF THE PO SHALL INCLUDE THE LIST OF ITEMS PROVIDED BY SIDEPLATE SYSTEMS, INC. WHICH IS AVAILABLE FOR DOWNLOADING FROM **http://www.sideplate.com/po**. THE SIDEPLATE® LICENSE FEE SHALL BE PAID WITHIN 75 CALENDAR DAYS FROM THE DATE ON WHICH THE LATEST OF THESE TWO EVENTS OCCURS. WITHOUT LIMITATION OF REMEDIES, LATE PAYMENTS SHALL BEAR INTEREST AT THE RATE OF 10% PER ANNUM.

   THE STEEL FABRICATOR SHALL MAKE PAYMENT OF THE SIDEPLATE® LICENSE FEE DIRECTLY TO:

   SIDEPLATE SYSTEMS, INC.
   25909 PALA, SUITE 200
   MISSION VIEJO, CALIFORNIA 92691
   TEL: 949-238-8900

GENERAL

1. THE GOVERNING CODES SHALL CONSIST OF ANSI/AWS D1.1-2008 (AWS D1.1), ANSI/AWS D1.8-2009 AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES (APRIL 14,2010), AND ALL APPLICABLE BUILDING AND JURISDICTIONAL CODES AND PROJECT STANDARDS SPECIFIED IN THE PROJECT SPECIFICATION STRUCTURAL STEEL SECTION. WHERE THE REQUIREMENTS DIFFER BETWEEN SIDEPLATE® CONNECTION NOTES, THE GENERAL STRUCTURAL NOTES AND THE GOVERNING CODES, THE MORE STRINGENT SECTION CRITERIA SHALL CONTROL.
2. ALPHA AND NUMERIC DESIGNATORS {#} & {#} USED HEREIN TO SIMPLIFY THE IDENTIFICATION OF PLATES, ANGLES AND WELDS, RESPECTIVELY, ARE DEFINED BELOW:

   {A} SIDE PLATE FOR UNIAXIAL CONNECTIONS, PARALLEL TO WEB OF COLUMN, CONNECTING BEAM TO COLUMN

   {B} BEAM FLANGE COVER PLATE BRIDGING BETWEEN SIDE PLATES {A}

   {C} VERTICAL SHEAR PLATE

   {D} HORIZONTAL SHEAR PLATE - SEE POPPED OUT AND RECESSED OPTIONS ON SHEET

   {E} ANGLE

   {F} VERTICAL SHEAR ELEMENT (WHICH CONSISTS OF PLATE {C} AND/OR ANGLE MATERIAL -SEE GRAPHIC NO. 9 FOR OPTIONS)

   {1} FILLET WELD CONNECTING SIDE PLATE {A} TO HORIZONTAL SHEAR PLATE {D}

   {2} FILLET WELD CONNECTING INSIDE FACE OF SIDE PLATE {A} TO COLUMN [DEMAND CRITICAL]

   {3} FILLET WELD CONNECTING HORIZONTAL SHEAR PLATE {D} TO FACES OF WEB AND FLANGES (WHERE APPLICABLE) OF COLUMN

   {4} FILLET WELD TO CONSTRUCT VERTICAL SHEAR ELEMENT {F} AND TO CONNECT VERTICAL SHEAR ELEMENT {F} TO THE BEAM

   {5} FILLET WELD CONNECTING EDGE OF BEAM FLANGE TO COVER PLATE {B} [DEMAND CRITICAL]

   {5a} FILLET WELD CONNECTING OUTSIDE SURFACE OF BEAM FLANGE TO COVER PLATE {B} 'U'-SHAPED SLOT [DEMAND CRITICAL]

   {6} FILLET WELD CONNECTING VERTICAL SHEAR ELEMENT {F} TO VERTICAL EDGE OF SIDE PLATE {A} [DEMAND CRITICAL]

   {7} FILLET WELD CONNECTING BEAM FLANGE COVER PLATE {B} AND/OR BEAM FLANGE TO SIDE PLATE {A}

SUBMITTALS

1. IN ADDITION TO THE REQUIRED SUBMITTALS SPECIFIED BY THE BALANCE OF THE CONTRACT DOCUMENTS, THE FOLLOWING SUBMITTALS SHALL BE SENT TO SIDEPLATE SYSTEMS, INC. AT 25909 PALA, SUITE 200, MISSION VIEJO, CA 92691, VIA THE VA AND/OR A/E, PRIOR TO THE START OF THE ACTIVITIES CITED BELOW:
   a. DETAILING OF SHOP DRAWINGS:
      PRIOR TO THE START OF THIS ACTIVITY, THE FABRICATION SUBCONTRACTOR SHALL FORMALLY REQUEST THE FOLLOWING FROM SIDEPLATE SYSTEMS, INC.:
      - THE NOTICE OF INTELLECTUAL PROPERTY (AutoCAD OR WORD FORMAT)
      - THE PATENT LABELS
   b. SHOP FABRICATION:
      PRIOR TO THE START OF THIS ACTIVITY, THE CONTRACTOR SHALL SUBMIT TO SIDEPLATE SYSTEMS, INC VIA THE STRUCTURAL ENGINEER OF RECORD AND/OR THE VA/ARCHITECT FOR ITS REVIEW AND DISPOSITION:
      - DISTORTION CONTROL PROGRAM (REQUIRED IF NOT AISC CERTIFIED)
      - QUALITY CONTROL PROGRAM (REQUIRED IF NOT AISC CERTIFIED)
      - WELDING PROCEDURE SPECIFICATIONS (WPS)
      - SUPPORTING PROCEDURE QUALIFICATION RECORDS (PQR)
      - ONE ELECTRONIC COPY OF ALL STRUCTURAL STEEL SHOP DRAWINGS THAT EITHER DIRECTLY PERTAINS TO AND/OR AFFECTS THE FABRICATION OR ERECTION OF THE SIDEPLATE® STEEL FRAME CONNECTION SYSTEM, INCLUDING THE INITIAL SUBMITTAL AND ALL CORRECTED RE-SUBMITTALS OF AFFECTED SHOP DRAWINGS. SIDEPLATE SYSTEMS, INC. SHALL BE GIVEN, AS A MINIMUM, THE SAME SPECIFIED REVIEW TIME (NOT LESS THAN 7 BUSINESS DAYS) AS THE ENGINEER OF RECORD.
   c. FIELD ERECTION:
      PRIOR TO THE START OF THIS ACTIVITY, THE CONTRACTOR SHALL SUBMIT TO SIDEPLATE SYSTEMS, INC VIA THE STRUCTURAL ENGINEER OF RECORD FOR ITS REVIEW AND DISPOSITION:
      - DISTORTION CONTROL PLAN (REQUIRED IF NOT AISC CERTIFIED)
      - QUALITY CONTROL PLAN (REQUIRED IF NOT AISC CERTIFIED)
      - WELDING PROCEDURE SPECIFICATIONS (WPS)
      - SUPPORTING PROCEDURE QUALIFICATION RECORDS (PQR)
      - ONE ELECTRONIC COPY OF ALL STRUCTURAL STEEL ERECTION DRAWINGS RELATED TO THE SIDEPLATE STEEL FRAME CONNECTION SYSTEM.

MATERIAL

1. PLATE AND ANGLE MATERIAL:
   a. ALL PLATE MATERIAL SHALL BE ASTM A572, GRADE 50.
   b. ANGLE {E} MATERIAL SHALL BE ASTM A529, GRADE 50, OR ASTM A36 (fy=50KSI MIN.), OR EQUIVALENT, UNO.
   c. ALL PLATE MATERIAL 2 INCHES THICK AND GREATER SHALL MEET THE FOLLOWING ADDITIONAL REQUIREMENTS:
      - ASTM A435 TO PRECLUDE LAMELLAR DISCONTINUITIES
      - A MINIMUM CVN TOUGHNESS OF 20 FT-LB. AT A TEMPERATURE OF 70°F IN ACCORDANCE WITH ASTM A6, SUPPLEMENTARY REQUIREMENT S5, AND THE PROVISIONS OF ASTM A673, FREQUENCY P-PIECE TESTING.
   d. THE ROLLED DIRECTION (I.E., DIRECTION OF GRAIN) OF SIDE PLATES {A} SHALL BE CLEARLY MARKED, USING ANY SUITABLE NON-DESTRUCTIVE MEANS, BY THE FABRICATION SUBCONTRACTOR ON EACH CUT PLATE TO INDICATE THE DIRECTION OF ROLL.
2. WELD FILLER METAL:
   a. THE WELD FILLER METAL AND ASSOCIATED WELDING PROCESS FOR ALL FILLET WELDS SHALL MEET THE REQUIREMENTS OF AWS D1.1 AND D1.8, SECTION 6.3.2 AND SHALL BE ANY OF THE FOLLOWING, PROVIDED COMPLIANCE WITH NOTES 2.c AND 2.d BELOW IS DEMONSTRATED
      - E70T-6, E71T-8 OR E70TG-K2 FOR FCAW
      - E7XT-9 FOR FLUX CORED ARC WELDING (FCAW) WITH GAS SHIELDING
      - F7A2-EXXX FOR SUBMERGED ARC WELDING (SAW)
      - E7018 STICK ELECTRODE FOR SHIELDED METAL ARC WELDING (SMAW)
   b. THE WELD FILLER METAL USED FOR FILLET WELDS TO CONSTRUCT THE SIDEPLATE® CONNECTION SYSTEM PRESENTED HEREIN SHALL DEMONSTRATE AN ENERGY EQUIVALENT TO A MINIMUM CVN TOUGHNESS OF 20 FT-LBS. IMPACT STRENGTH AT A TEMPERATURE OF -20°F AND 40 FT-LBS. IMPACT STRENGTH AT 70°F AS DETERMINED BY AWS CLASSIFICATION TEST METHODS OR MANUFACTURER CERTIFICATION.
   c. ALL WELD FILLER METAL SHALL SATISFY A MAXIMUM DIFFUSIBLE HYDROGEN CONTENT REQUIREMENT PER AWS AND D1.8 SECTION 6.3, OF 16 MILLILITERS OF HYDROGEN PER 100 GRAMS OF WELD METAL (H16) OR LESS.
   d. REFER TO AWS D1.8 ANNEX B, FOR REQUIREMENTS WHEN MIXING FCAW-S WITH OTHER WELD PROCESSES.
3. HIGH STRENGTH BOLTS:
   a. BOLTS SHALL BE ASTM A325-N GRADE MATERIAL
4. ROLLED SHAPES AND WELDED BUILT-UP SHAPES:
   a. ALL ROLLED SHAPES USED FOR COLUMNS AND BEAMS IN CONSTRUCTING SIDEPLATE® MOMENT FRAMES SHALL BE ASTM A992 GRADE 50 UNO.
   b. HEAVY SHAPES (AS OCCURS):
      - FOR EACH DIFFERENT SIZE OF STEEL FRAME COLUMNS AND BEAMS IDENTIFIED IN THE CONTRACT DOCUMENTS INVOLVING ASTM A6 HOT-ROLLED SHAPES WITH FLANGES 1 1/2 INCHES THICK OR THICKER, AND/OR PLATE 2 INCHES THICK OR THICKER USED TO CONSTRUCT WELDED BUILT-UP SECTIONS, CHARPY V-NOTCH (CVN) TOUGHNESS TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH THE PROVISIONS OF ASTM A673, AS FOLLOWS:
        ●● FREQUENCY H - HEAT TESTING FOR CITED ASTM A6 GROUP SHAPES AND/OR THRESHOLD OF FLANGE THICKNESS.
        ●● FREQUENCY P - PIECE TESTING FOR CITED THRESHOLD OF PLATE THICKNESS.
      - A MINIMUM CVN TOUGHNESS OF 20 FT-LB AT A TEMPERATURE OF 70° F, IN ACCORDANCE WITH ASTM A6, SUPPLEMENTARY REQUIREMENT S30, SHALL BE DOCUMENTED IN THE (CERTIFIED MILL TEST REPORT) CMTR.
        ●● IF THE CMTR DOES NOT DOCUMENT THE MINIMUM CVN VALUES, A COUPON SHALL BE REMOVED FROM THE END OF EACH MEMBER SHAPE SAMPLED AND/OR FROM THE END OF EACH PIECE OF PLATE TO BE TESTED. THE LENGTH OF COUPON SHALL BE ORIENTED PARALLEL TO THE LONGITUDINAL AXIS OF THE MEMBER. THE TEST SPECIMEN SHALL BE MACHINED FROM EACH COUPON, EXCEPT THE LONGITUDINAL AXIS OF THE TEST SPECIMEN FOR HEAVY ROLLED SHAPES SHALL BE LOCATED AS NEAR AS PRACTICABLE TO A POINT MIDWAY BETWEEN THE INNER FLANGE SURFACE AND THE CENTER OF FLANGE THICKNESS, AT THE INTERSECTION OF THE WEB MID-THICKNESS, IN ACCORDANCE WITH THE AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, SECTION A3-1C, HEAVY SHAPES.

PREPARATION

1. THE CONTRACTOR'S FABRICATION AND ERECTION SUBCONTRACTOR SHALL EMPLOY A DISTORTION CONTROL PROGRAM AND SHALL SUBMIT IT TO SIDEPLATE SYSTEMS INC. VIA THE VA AND/OR A/E, FOR ITS REVIEW AND DISPOSITION PRIOR TO THE START OF SIDEPLATE® MOMENT FRAME FABRICATION. THE DISTORTION CONTROL PROGRAM SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF AWS D1.1 SECTION 5.21 AND 5.22 TO ENSURE THAT THE FOLLOWING ARE MAINTAINED:
   - DIMENSIONAL ACCURACY
   - FRAMING AND ALIGNMENT TOLERANCES
   - COMPLIANCE WITH AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, SECTION 7.0, ERECTION PROVISIONS
   - CONTROL OF DISTORTION AND WELD SHRINKAGE
2. BASE METAL SURFACE PREPARATION: SURFACES ON WHICH WELD METAL IS TO BE DEPOSITED, INCLUDING BUT NOT LIMITED TO COLUMN FLANGE TIPS (I.E., COLUMN FLANGE-TO-SIDE PLATE {A} ATTACHMENT), BEAM FLANGE TIPS (I.E., BEAM FLANGE-TO-COVER PLATE {B} ATTACHMENT), AND THERMAL CUT EDGES (E.G., LONGITUDINAL EDGES OF COVER PLATE {B}), SHALL BE SMOOTH, UNIFORM, AND FREE FROM LOOSE OR THICK SCALE, SLAG, RUST, MOISTURE, GREASE AND OTHER FOREIGN MATERIAL THAT WOULD PREVENT PROPER WELDING.
3. THERMAL CUTTING:
   a. THE ROUGHNESS OF ALL THERMAL-CUT SURFACES SHALL BE NO GREATER THAN AN ANSI SURFACE ROUGHNESS VALUE OF 1000 MICRO-INCHES. ROUGHNESS EXCEEDING THIS VALUE, AND NOTCHES OR GOUGES NOT MORE THAN 3/16 INCH DEEP, ON OTHERWISE SATISFACTORY SURFACES SHALL BE REMOVED BY MACHINING OR GRINDING.
   b. FLAME CUT SURFACES SHALL BE FREE OF GLOBULES AND LOOSE SLAG. THE THERMAL CUTTING EQUIPMENT SHALL BE ADJUSTED AND MANIPULATED SO AS TO AVOID CUTTING BEYOND (INSIDE) THE PRESCRIBED LINES.
   c. THERMAL CUTTING PROCESSES SHALL BE LIMITED TO PLASMA ARC-CUTTING OR OXYFUEL GAS PROCESSES.
4. WEB/FLANGE FILLET AREA (K-LINE):
   a. UNLESS NOTED OTHERWISE, VERTICAL SHEAR PLATES {C} AND HORIZONTAL SHEAR PLATES {D} SHALL HAVE THEIR INSIDE CORNERS CLIPPED PER AWS D1.8 CLAUSE 4 TO PREVENT WELDING IN THE K-AREA BETWEEN WEB AND FLANGE. THE DIMENSIONS OF THE CLIPPED CORNER SHALL BE DETAILED ON THE SHOP DRAWINGS AND SHALL BE SUCH THAT THE WELD FROM THE PLATE TO THE WEB STARTS AND STOPS A DISTANCE OF 11/2" FROM THE TANGENT OF THE FLANGE TO WEB FILLET (I.E., THE AISC 'K' DIMENSION).
   b. WELD {3} RETURNS ON THE INSIDE FACE OF THE COLUMN FLANGES (AS OCCURS): IN NO CASE SHALL A WELD TIE-IN OF WELD {3} BE ALLOWED ACROSS THE CLIPPED CORNER OF THE HORIZONTAL SHEAR PLATES {D}, AT THE K-LINE BETWEEN WEB AND FLANGE.
   c. WHERE WELDING OF HORIZONTAL SHEAR PLATE {D} OR VERTICAL SHEAR PLATE {C} ENCROACH INTO THE K-AREA (AS DEFINED IN AISC 341-10), THE WEB SHALL BE TESTED FOR CRACKS USING MAGNETIC PARTICLE TESTING (MT). THE MT INSPECTION AREA SHALL INCLUDE THE ACCESSIBLE K-AREA BASE METAL WITHIN 3 INCHES.

WELDING

1. WELDER QUALIFICATION: THE PERFORMANCE OF ALL WELDERS, WELDING OPERATORS AND TACK WELDERS SHALL BE QUALIFIED IN CONFORMANCE WITH AWS D1.1, SECTION 4, PART C TO DEMONSTRATE ABILITY TO PRODUCE SOUND WELDS.
2. WELDING PROCEDURE SPECIFICATIONS (WPS):
   a. THE CONTRACTOR SHALL PREPARE A SPECIFIC WRITTEN WPS FOR EVERY DIFFERENT WELDING APPLICATION DIFFERENT WELDING APPLICATIONS INCLUDE, BUT ARE NOT LIMITED TO, THE JOINT DETAILS AND TOLERANCES, PREHEAT AND INTERPASS TEMPERATURE, SINGLE OR MULTIPLE STRINGER PASSES, WELDING CURRENT, POLARITY, ALLOWABLE AMPERAGE RANGES, ALLOWABLE VOLTAGE RANGES, ALLOWABLE TRAVEL SPEED RANGES, ELECTRODE EXTENSION, ROOT TREATMENT, WELDING POSITION, WELDING PROCESS, ELECTRODE MANUFACTURER, FILLER METAL TRADE NAME FOR THE ELECTRODE TYPE SELECTED, AND OTHER ESSENTIAL VARIABLES AS DEFINED IN AWS D1.1 REQUIRED TO COMPLETE THE FABRICATION AND ERECTION OF THE SPECIFIED SIDEPLATE® CONNECTIONS. AMPERAGE, VOLTAGE, TRAVEL SPEED AND ELECTRODE EXTENSION SHALL BE WITHIN THE FILLER METAL MANUFACTURER'S RECOMMENDATIONS.
   b. EACH WPS PREPARED SHALL BE BASED ON AND REFERENCED TO A DOCUMENTED PROCEDURE QUALIFICATION RECORD (PQR). PREVIOUS WPS QUALIFICATION PERFORMED BY THE CONTRACTOR'S FABRICATION/ERECTION SUBCONTRACTOR THAT COMPLIES WITH THE PROVISIONS HEREIN MAY SATISFY THIS REQUIREMENT. EACH WPS AND SUPPORTING PQR SHALL BE SUBMITTED TO THE ENGINEER OF RECORD, AND TO SIDEPLATE SYSTEMS, INC. FOR REVIEW AND DISPOSITION PRIOR TO STARTING THE WORK.
   c. THE APPROVED WPS FOR EACH APPLICABLE PRODUCTION WELD, FOR THE WORK TO BE PERFORMED, SHALL BE CLEARLY DISPLAYED TO PROVIDE READY ACCESS BY THE ASSIGNED WELDERS, WELDING SUPERVISORS AND INSPECTORS.
   d. EACH WPS SHALL BE PREPARED BY A QUALIFIED INDIVIDUAL WHO IS RESPONSIBLE FOR THE SUITABILITY OF THE WPS.
3. WELDING PROCEDURE QUALIFICATION RECORDS (PQR):
   a. DOCUMENTED PROCEDURE QUALIFICATION RECORDS SHALL BE MAINTAINED BY THE CONTRACTOR'S FABRICATION/ERECTION SUBCONTRACTOR. PROCEDURE QUALIFICATION SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.1, TABLE 4.1 AND EMPLOY THE FOLLOWING TESTING METHODS AND ACCEPTANCE CRITERIA:
      - VISUAL INSPECTION IN ACCORDANCE WITH AWS D1.1, SECTION 4.8.1.
      - ULTRASONIC TESTING (UT) BEFORE PREPARING MECHANICAL TEST SPECIMENS, IN ACCORDANCE WITH AWS D1.1, SECTION 4.8.2.
      - MECHANICAL TESTING IN ACCORDANCE WITH AWS D1.1, SECTION 4.8.3. THE TYPE AND NUMBER OF TEST SPECIMENS, FOR EACH QUALIFIED PRODUCTION WELDING POSITION, SHALL BE PER AWS D1.1, TABLE 4.2 (1), USING A GROOVE WELD TEST PLATE PER FIGURE 4.10(2).
      - ALTERNATELY, FOR FILLET WELDS ONLY, QUALIFICATION BY MECHANICAL TESTING MAY BE SATISFIED BY A CONSUMABLES VERIFICATION TEST IN ACCORDANCE WITH AWS D1.1, SECTION 4.11.3 USING A GROOVE WELD TEST PLATE PER FIGURE 4.23, WELDED IN THE FLAT POSITION; FOLLOWED BY MACROTECH TEST IN ACCORDANCE WITH AWS D1.1, SECTION 4.11.2, USING A FILLET WELDED T-JOINT TEST PLATE PER FIGURE 4.19 FOR EACH QUALIFIED PRODUCTION WELDING POSITION. THE TYPE AND NUMBER OF TEST SPECIMENS, FOR EACH QUALIFIED PRODUCTION WELDING POSITION, SHALL BE PER AWS D1.1, TABLE 4.4.
      - CHARPY V-NOTCH IMPACT TESTING OF THE WELD METAL IN ACCORDANCE WITH AWS D1.1, SECTION 4.1.1.3. THE REQUIRED TEST TEMPERATURE AND ENERGY VALUE SHALL BE THAT SPECIFIED IN MATERIAL SECTION 2.C. THE TYPE AND NUMBER OF NOTCH TOUGHNESS SPECIMENS, FOR EACH QUALIFIED PRODUCTION WELDING POSITION, SHALL BE PER AWS D1.1, ANNEX III, TABLE III-1. ONE SPECIMEN MAY BE LESS THAN THE MINIMUM AVERAGE OF 20 FT-LBS., BUT NOT LESS THAN 15 FT-LBS.
   b. ALL PROCEDURE QUALIFICATION TESTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY CERTIFIED BY THE APPLICABLE GOVERNMENTAL BODY AND APPROVED BY THE AUTHORITY HAVING JURISDICTION.
   c. IN LIEU OF THE REQUIREMENTS OF 3.a AND 3.b, A CURRENT CERTIFICATE OF CONFORMANCE PROVIDED BY THE WIRE MANUFACTURE MAY BE USED AS THE SUPPORTING PQR PROVIDED FULL COMPLIANCE WITH EVERY SINGLE CONDITION OF PREQUALIFICATION FOUND IN AWS D1.1 SECTION 3, AND AWS D1.8 HIGH AND LOW HEAT INPUT, FOR PREQUALIFIED FILLET AND CJP WELDS. THE SELECTION OF THIS OPTION BY THE CONTRACTOR'S FABRICATION/ERECTION SUBCONTRACTOR IS PREDICATED ON ITS ACKNOWLEDGEMENT THAT ITS CERTIFIED WELDERS ARE EXPERIENCED AND CONFIDENT IN THE USE AND SETTINGS SPECIFIED IN THE CERTIFICATE OF CONFORMANCE WITH THE ALLOWABLE TOLERANCES FOR ESSENTIAL VARIABLES FOUND IN TABLE 4.5 OF AWSD1.1. COMBINATIONS OF WELDING VARIABLES SHALL PRODUCE HEAT INPUTS WITHIN THE RANGE QUALIFIED BY THE ELECTRODE MANUFACTURER'S HEAT INPUT ENVELOPE TESTING OF FILLER METALS AS REQUIRED BY AWS D1.8.
4. TACK WELDS:
   a. TACK WELDS SHALL BE PLACED WHERE THEY SHALL BE INCORPORATED INTO A FINAL WELD AND SHALL BE SUBJECT TO THE SAME QUALITY REQUIREMENTS AS THE FINAL WELDS, INCLUDING POSITION, PREHEAT AND UNDERCUT, IN ACCORDANCE WITH AWS D1.1, SECTION 5.18.2, AND AWS D1.8, SECTION 6.16. THESE QUALITY REQUIREMENTS SHALL APPLY EQUALLY TO TACK WELDING OF ANY OTHER CONSTRUCTION AIDS.
   b. TACK WELDS BETWEEN SIDE PLATE {A}, AND FLANGE EDGES OF COLUMN SHALL NOT BE PLACED WITHIN 3 INCHES OF EACH END OF WELD {2}, AND THEY SHALL NOT BE PERMITTED ACROSS THE COLUMN'S FLANGE THICKNESS.
   c. TACK WELDS BETWEEN SIDE PLATES {A}, AND COVER PLATES {B} , AND TACK WELDS BETWEEN BEAM FLANGE TIPS AND COVER PLATES {B} , SHALL NOT BE PLACED WITHIN 3 INCHES OF EACH END OF WELD {7} OR WELD {5} , RESPECTIVELY.
   d. ALIGNMENT CONTROL METHODS TO MAINTAIN THE NECESSARY SEPARATION DISTANCE REQUIRED TO INSTALL BEAM ASSEMBLY INCLUDE, BUT ARE NOT LIMITED TO, TACK WELDING OF TEMPORARY ANGLE STRUTS ('DOGS') TO TOP AND BOTTOM FREE EDGES OF SIDE PLATE {A}.
5. WELD RUN-OFF TABS SHALL NOT BE USED FOR FILLET WELDS.
6. PREHEAT AND INTERPASS TEMPERATURE REQUIREMENTS:
   a. THE MINIMUM PREHEAT AND INTERPASS TEMPERATURES FOR A GIVEN THICKNESS OF BASE METAL TO BE WELDED SHALL BE IN ACCORDANCE WITH AWS D1.1 TABLE 3.2.
   b. IN NO CASE, REGARDLESS OF THE WELDING PROCESS, SHALL THE PREHEAT TEMPERATURE BE LESS THAN THAT REQUIRED TO DRIVE OFF ANY SURFACE MOISTURE OR CONDENSATION WHICH MAY BE PRESENT ON THE STEEL ELEMENTS TO BE WELDED.
   c. PREHEAT TEMPERATURES SHALL BE MEASURED AT A DISTANCE FROM THE WELD EQUAL TO THE THICKNESS OF THE PART BEING WELDED, BUT NOT LESS THAN THREE INCHES IN ANY DIRECTION INCLUDING THE THROUGH THICKNESS OF THE PIECE. WHERE PLATES ARE OF DIFFERENT THICKNESS, THE PREHEAT REQUIREMENT FOR THE THICKER PLATE SHALL GOVERN. MAINTENANCE OF PREHEAT TEMPERATURE THROUGH THE EXECUTION OF THE WELD (I.E. THE INTERPASS TEMPERATURE) IS ESSENTIAL. MAXIMUM INTERPASS TEMPERATURE SHALL NOT EXCEED 550 DEGREES FAHRENHEIT, MEASURED AT A DISTANCE NOT EXCEEDING THREE INCHES FROM THE START OF THE WELD PASS. WELDING OPERATORS AND INSPECTORS SHALL BE IN POSSESSION OF AND UTILIZING TEMPERATURE MEASURING DEVICES.
7. ALL SLAG SHALL BE REMOVED AFTER EACH WELD PASS AND THE WELD AND THE ADJACENT BASE METAL SHALL BE CLEANED BEFORE WELDING OVER PREVIOUSLY DEPOSITED WELD METAL. THIS REQUIREMENT SHALL APPLY NOT ONLY TO SUCCESSIVE LAYERS BUT ALSO TO SUCCESSIVE BEADS AND TO THE CRATER AREA WHEN WELDING IS RESUMED AFTER ANY INTERRUPTION, IN ACCORDANCE WITH AWS D1.1 SECTION 5.30.1.
8. ARC STRIKES WITHIN THE SIDEPLATE PROTECTED ZONE ON BOTH THE INTERIOR AND EXTERIOR FACES OF SIDE PLATES {A}, WITHIN THE TOP AND BOTTOM 6 INCHES OF PLATE HEIGHT SHALL BE AVOIDED. IF THEY DO OCCUR, THEY SHALL BE REMOVED BY GRINDING AND SHALL HAVE BASE METAL REPAIRED AND NON-DESTRUCTIVE TESTING AS NECESSARY.
9. WELD END TERMINATIONS FOR RECESSED PLATE {D} OPTION ONLY (AS OCCURS FOR THE WELD {3} ONLY ON THE COLUMN WEB AND FLANGES):
   a. IN ORDER TO PREVENT TIE-IN BETWEEN THE ENDS OF WELD {3} , CLOSEST TO THE INSIDE FACE OF SIDE PLATE {A} , AND WELD {1} , THE ENDS OF WELD {1} SHALL BE HELD BACK FROM THE FLANGE TIP OF COLUMN BY A DISTANCE EQUAL TO WELD {3} PLUS 1/8". IN NO CASE SHALL A WELD TIE-IN BETWEEN THE ENDS OF WELD {1} AND THE ENDS OF WELD {3} CLOSEST TO THE INSIDE FACE OF SIDE PLATE {A} BE ALLOWED. FABRICATION PRIORITY IS GIVEN HEREIN TO WELDING FILLET WELD {3} ALONG ITS FULL DISTANCE.
10. PEENING SHALL NOT BE ALLOWED.

BOLTING

1. ASTM A325-N BOLTS ARE PERMITTED TO BE INSTALLED TO SNUG-TIGHT CONDITION. THE SNUG-TIGHT CONDITION IS DEFINED AS THE TIGHTNESS ATTAINED BY EITHER A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A WORKER WITH AN ORDINARY SPUD WRENCH THAT BRINGS THE CONNECTED PLIES INTO FIRM CONTACT.

QUALITY CONTROL

1. THE CONTRACTOR'S FABRICATION/ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR QUALITY CONTROL BY PROVIDING, AS A MINIMUM, IN-PROCESS VISUAL INSPECTION OF ALL FABRICATION AND ERECTION ACTIVITIES TO ENSURE THAT MATERIALS AND WORKMANSHIP MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, AND SHALL INCLUDE WORK PERFORMED PRIOR TO ASSEMBLY. SUCH WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, VERIFYING THAT EFFECTIVE PROCEDURES AND METHODS HAVE BEEN EMPLOYED IN THE FORM OF AN EFFECTIVE DISTORTION CONTROL PROGRAM TO ACCOUNT FOR AND COUNTERACT THE EFFECTS OF WELD SHRINKAGE, EXISTING BEAM SWEEP AND CAMBER, AND CHANGES IN MOMENT FRAME GEOMETRY DUE TO SKEWED AND CURVED DESIGN CONFIGURATIONS (AS OCCURS), TO ENSURE COMPLIANCE WITH SPECIFIED ERECTION AND ALIGNMENT TOLERANCES. QC INSPECTION SHALL INCLUDE **HOLD POINTS** FOR THE FOLLOWING:

   FULL-LENGTH BEAM APPLICATIONS:
   a. COLUMN TREE ASSEMBLY
      i VERIFICATION THAT ACTUAL COLUMN FLANGE WIDTH IS AT LEAST NOMINAL COLUMN FLANGE WIDTH WHERE THE SIDE PLATES {A} ARE TO BE INSTALLED. IN THE UNLIKELY EVENT ACTUAL COLUMN FLANGE WIDTH IS LESS THAN NOMINAL, BUT WITHIN AISC STANDARD MILL TOLERANCES (-3/16" MAX), CONTACT SIDEPLATE SYSTEMS, INC FOR APPROPRIATE RECOMMENDATIONS.
      ii QC INSPECTION SHALL PROVIDE A HOLD POINT AFTER PLACEMENT OF WELD {2}, COOLING OF WELD {2} AND REMOVAL OF BOTTOM 'DOG' TO VERIFY MINIMUM DIMENSION 'Z' ANYWHERE IN BETWEEN THE SIDE PLATES FROM TOP TO BOTTOM, AND TO ASCERTAIN IF REQUIRED RATTLE SPACE WILL BE PROVIDED BASED ON THE DETAILED WIDTH OF TOP COVER PLATE {B} (SEE GRAPHIC NO. 5).
      iii VERIFICATION THAT THE CENTER OF BOTTOM BOLT HOLE IN EACH SIDE PLATE {A} IS 6 INCHES ABOVE THE BOTTOM EDGE OF SIDE PLATE {A}.
   b. FULL-LENGTH BEAM ASSEMBLY
      i VERIFICATION OF PERPENDICULAR ALIGNMENT BETWEEN TOP FACE OF BOTTOM COVER PLATE {B} AND WEB OF FULL-LENGTH BEAM, TO MINIMIZE, IF NOT ELIMINATE, ANY POTENTIAL ROOT GAP BETWEEN BOTTOM EDGE OF EACH SIDE PLATE {A}, AND TOP FACE OF THE BOTTOM COVER PLATE {B} WHEN THE FULL-LENGTH BEAM HAS BEEN LIFTED INTO PLACE.
      ii VERIFICATION THAT THE CENTER OF BOTTOM ERECTION BOLT HOLE IS 6 INCHES ABOVE THE TOP FACE OF THE BOTTOM COVER PLATE {B}. CONSIDERATION SHALL BE GIVEN TO THE CUPPING UPWARD OF THE BOTTOM COVER PLATE {B}.
      iii VERIFICATION THAT THE ENTIRE EXTERIOR FACE OF THE OUTSTANDING LEG OF VERTICAL SHEAR ELEMENT IS PARALLEL TO THE WEB OF THE FULL-LENGTH BEAM. IN NO CASE SHALL THE OUTSIDE FACE OF THE VERTICAL SHEAR ELEMENT EXTEND BEYOND THE EDGE OF TOP COVER PLATE {B}.
2. EXPOSURE LIMITATIONS ON FCAW ELECTRODES:
   a. AFTER REMOVAL FROM PROTECTIVE PACKAGING, THE PERMISSIBLE ATMOSPHERIC EXPOSURE TIME OF FCAW ELECTRODES SHALL NOT EXCEED THE ELECTRODE MANUFACTURER'S GUIDELINES AND SHALL BE IN ACCORDANCE WITH AWS D1.8 SECTION 6.4.
3. FILLET WELD FIT-UP TOLERANCES:
   a. THE PARTS TO BE JOINED BY FILLET WELDS SHALL BE BROUGHT INTO AS CLOSE CONTACT AS PRACTICABLE, USING AS NECESSARY SUITABLE CLAMPING MEANS. THE ROOT OPENING (I.E., THE FIT-UP GAP) SHALL NOT EXCEED 1/4 INCH. FOR FILLET WELD ROOT GAPS GREATER THAN 1/16 INCH, THE LEG SIZE (I.E., THE SPECIFIED SIZE) OF FILLET WELD SHALL BE INCREASED BY THE AMOUNT OF THE ROOT OPENING.

QUALITY ASSURANCE

1. IN ADDITION TO ALL OTHER QUALITY ASSURANCE INSPECTION ACTIVITIES, THE OWNER'S VERIFICATION INSPECTOR SHALL BE RESPONSIBLE FOR:
   a. MAGNETIC PARTICLE TESTING (MT) SHALL BE PROVIDED IN ACCORDANCE WITH AWS D1.1, ASTM E709 AND ASTM E1444 FOR PROCEDURE AND TECHNIQUE FOR FILLET WELDS {7}. INSPECT THE BEGINNING AND END OF THESE WELDS FOR A 6 INCH LENGTH, PLUS ANY LOCATION ALONG THE LENGTH OF THE WELD WHERE A START AND RESTART IS VISUALLY NOTED FOR A DISTANCE OF 6 INCHES ON EITHER SIDE OF THE STOP/START LOCATION. THE STANDARDS OF ACCEPTANCE SHALL BE IN ACCORDANCE WITH AWS D1.1, ASTM E709 AND ASTM E1444.
   b. EACH WPS AND SUPPORTING PQR SHALL BE SUBMITTED TO THE ENGINEER OF RECORD, AND TO SIDEPLATE SYSTEMS, INC. FOR REVIEW AND APPROVAL **PRIOR TO THE START OF FABRICATION**.
   c. TO ASSURE THE PROPER AMPERAGE AND VOLTAGE OF THE WELDING PROCESS, THE USE OF HAND HELD CALIBRATED AMP AND VOLT METERS SHALL BE USED. THIS EQUIPMENT SHALL BE USED BY THE FABRICATOR, ERECTOR, AND THE INSPECTOR. AMPERAGE AND VOLTAGE SHALL BE MEASURED NEAR THE ARC. TRAVEL SPEED AND ELECTRODE STICK OUT SHALL BE VERIFIED TO BE IN COMPLIANCE WITH THE APPROVED WPS.
   d. VISUAL INSPECTION SHALL BE PERFORMED ON ALL SHOP AND FIELD WELDS.
   e. EACH WELDER EMPLOYED ON THE PROJECT SHALL UNDERSTAND ALL THE REQUIREMENTS OF THE WELDING PROCEDURE SPECIFICATION (S) BEFORE WELDING ON THE PROJECT.
   f. WHERE WELDING OF HORIZONTAL SHEAR PLATE {D} OR VERTICAL SHEAR PLATE {C} ENCROACH INTO THE K-AREA (AS DEFINED IN AISC 341), THE WEB SHALL BE TESTED FOR CRACKS USING MAGNETIC PARTICLE TESTING (MT). THE MT INSPECTION AREA SHALL INCLUDE THE K-AREA BASE METAL WITHIN 3 IN. (75 MM) OF THE WELD. THE MT SHALL BE PERFORMED NO SOONER THAN 48 HOURS FOLLOWING COMPLETION OF THE WELDING.

PROTECTED ZONES

1. PER AISC 341 SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS, SECTION 7.4, SPECIAL (SMF) AND INTERMEDIATE (IMF) MOMENT FRAME SYSTEMS SHALL HAVE DESIGNATED PROTECTED ZONES AS FOLLOWS:

   BEAM
   - THE PROTECTED ZONE STARTS FROM THE VERTICAL EDGE OF SIDE PLATE {A}, AWAY FROM THE COLUMN, AND ENDS 0.83 TIMES THE DEPTH OF THE BEAM, SEE SIDEPLATE® TYPICAL DETAILS. NOTE: WELD {5} AND/OR {5a} IS ACCEPTABLE IN THIS PROTECTED ZONE.

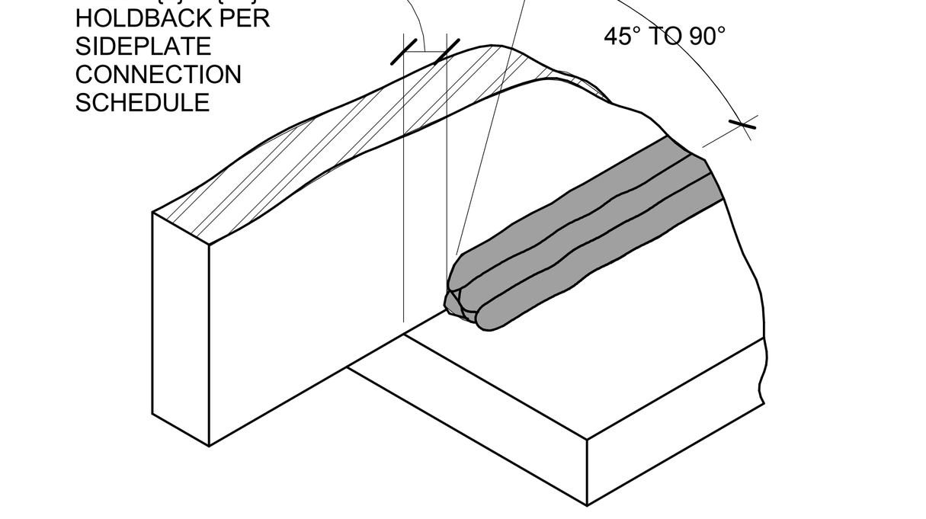
   SIDE PLATE
   - THE PROTECTED ZONE FOR THE SIDE PLATES {A} ARE DEFINED AS A RECTANGULAR AREA CENTERED AT THE COLUMN/BEAM SEPARATION (GAP) ALONG THE TOP AND BOTTOM EDGES OF THE SIDE PLATES {A}. SEE SIDEPLATE® TYPICAL DETAILS. NOTE: WELDS {1}, {2} & {7} ARE ACCEPTABLE IN THIS PROTECTED ZONE.

INTELLECTUAL PROPERTY

1. IN ORDER TO SAFEGUARD THE AUTHORIZED USE AND INTELLECTUAL PROPERTY OF THE PATENTED SIDEPLATE® CONNECTION TECHNOLOGY, THE CONTRACTOR SHALL REQUIRE ITS FABRICATION SUBCONTRACTOR TO SATISFY THE FOLLOWING REQUIREMENTS:
   a. A NOTICE OF INTELLECTUAL PROPERTY, IDENTICAL TO THAT PROVIDED ON THIS SHEET, SHALL BE AFFIXED ON EACH SHEET OF SHOP DETAIL AND FIELD ERECTION DRAWINGS CONTAINING SIDEPLATE® SYSTEM INFORMATION WHICH DISCLOSES IN ANY WAY THE SIDEPLATE® CONNECTION CONCEPT PRIOR TO RELEASING SUCH INFORMATION FOR ITS INTENDED USE. SUCH NOTICE SHALL BE PROVIDED TO THE CONTRACTOR'S FABRICATION SUBCONTRACTOR BY SIDEPLATE SYSTEMS, INC. IN A FORMAT (E.G. WORD OR AUTOCAD) SUITABLE TO THE NEEDS OF THE FABRICATION SUBCONTRACTOR'S DETAILER.
   b. PATENT LABEL SHALL BE APPLIED ON THE OUTSIDE FACE OF ONE OF THE TWO BOTTOM HORIZONTAL STIFFENER PLATES {D}, OF EACH MOMENT CONNECTION (SEE GRAPHIC NO. 5) AND ON ONE END OF THE FULL LENGTH BEAM WEB BETWEEN THE TOP AND BOTTOM COVER PLATES {B} (SEE GRAPHIC NO.8), IN COMPLIANCE WITH THE PATENT AND INTELLECTUAL PROPERTY LAWS OF THE UNITED STATES OF AMERICA.

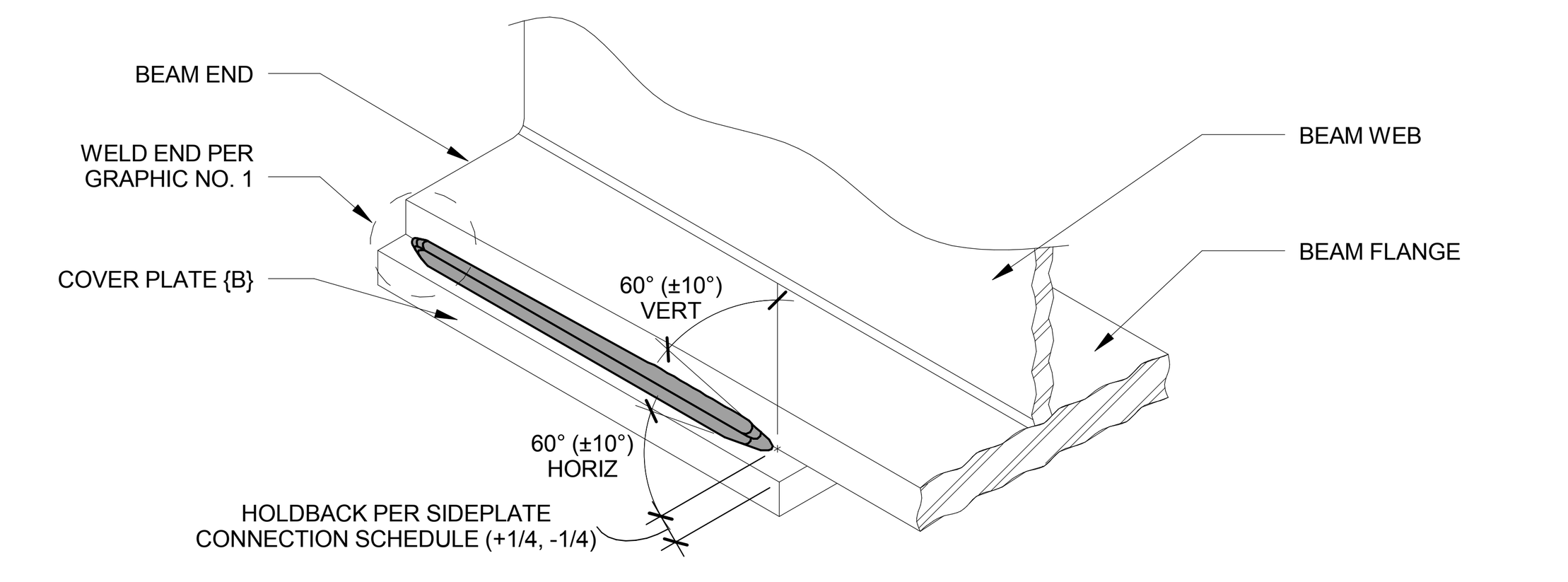
CONSTRUCTION GUIDELINES

1. THE CONTRACTOR SHALL ASSUME FULL AND COMPLETE RESPONSIBILITY FOR THE MEANS AND METHODS OF CONSTRUCTING THE STEEL FRAME USING THE SIDEPLATE® CONNECTION SYSTEM. CONSTRUCTION MEANS AND METHODS SHALL BE COMPLIANT WITH THE CURRENT PROVISIONS OF AWS D1.1, AND WITH THE CONSTRUCTION GUIDELINES PROVIDED HEREIN; AND SHALL INCLUDE, BUT ARE NOT LIMITED TO:
   a. DIMENSIONAL VERIFICATION AND CONTROL
   b. FILLET WELD END PROFILE AND HOLDBACK DISTANCES FROM EDGE OF PLATE
   c. STEEL DETAILING AND ERECTION DRAWINGS
   d. FABRICATION AND ERECTION PROCEDURES (INCLUDING METHODS FOR CONTROLLING DISTORTION DUE TO WELD SHRINKAGE, AND FOR CONTROLLING COMBINED MILL, FABRICATION AND ERECTION TOLERANCES)
   e. WELDING PROCEDURES
   f. WELDING SEQUENCE OF FABRICATED AND ERECTED ELEMENTS
   g. QUALITY CONTROL MEASURES
   h. CONSTRUCTION STRUCTURES SUCH AS ERECTION RIGGING AND SHORING
2. THE SEQUENCE OF CONSTRUCTION OPTIONS PROVIDED BELOW IN THESE CONSTRUCTION GUIDELINES HAVE PROVEN TO BE SUCCESSFUL BY STEEL FABRICATORS AND ERECTORS TO COST EFFICIENTLY CONSTRUCT THE SIDEPLATE® CONNECTION SYSTEM. VARIATIONS TO THESE CONSTRUCTION SEQUENCE OPTIONS PROVIDED BELOW SHALL BE SUBMITTED FOR REVIEW AND DISPOSITION TO SIDEPLATE SYSTEMS, INC.
3. A PRE-FABRICATION KICK-OFF MEETING WITH A SIDEPLATE SYSTEMS, INC REPRESENTATIVE AND VA COR AND CO IS REQUIRED FOR ALL PROJECTS.
4. WELD END PROFILE OF FILLET WELDS:
   a. THE START AND STOP OF FILLET WELDS {1}, {2}, {3}, {4}, {5a}, {6} AND {7} SHALL BE ACCOMPLISHED BY STEPPED STRINGER PASSES STARTING FROM EACH END OF ROOT PASS. STEPPED PASSES SHALL BE STACKED AT AN ANGLE THAT IS BETWEEN 45° AND 90° WITHOUT OVERLAPPING, UNO.
   b. START OR STOP FILLET WELDS AS DEFINED BELOW IN GRAPHIC NO. 1. NO WRAP AROUND SHALL BE ALLOWED.



GRAPHIC NO. 1 - FILLET WELD END PROFILE FOR FILLET WELDS {1}, {2}, {3}, {4}, {5a},{6} AND {7}

   c. THE END OF FILLET WELD {5}, FURTHEST FROM BEAM END, SHALL BE ACCOMPLISHED BY STEPPED STRINGER PASSES STARTING FROM THE END OF THE PREVIOUSLY DEPOSITED STRINGER PASS. THE ROOT PASS SHALL START A DISTANCE FROM END OF COVER PLATE {B} PER THE HOLDBACKS CALLED OUT IN THE SIDEPLATE CONNECTION SCHEDULE. STEPPED PASSES SHALL BE STACKED PER GRAPHIC 2 BELOW.

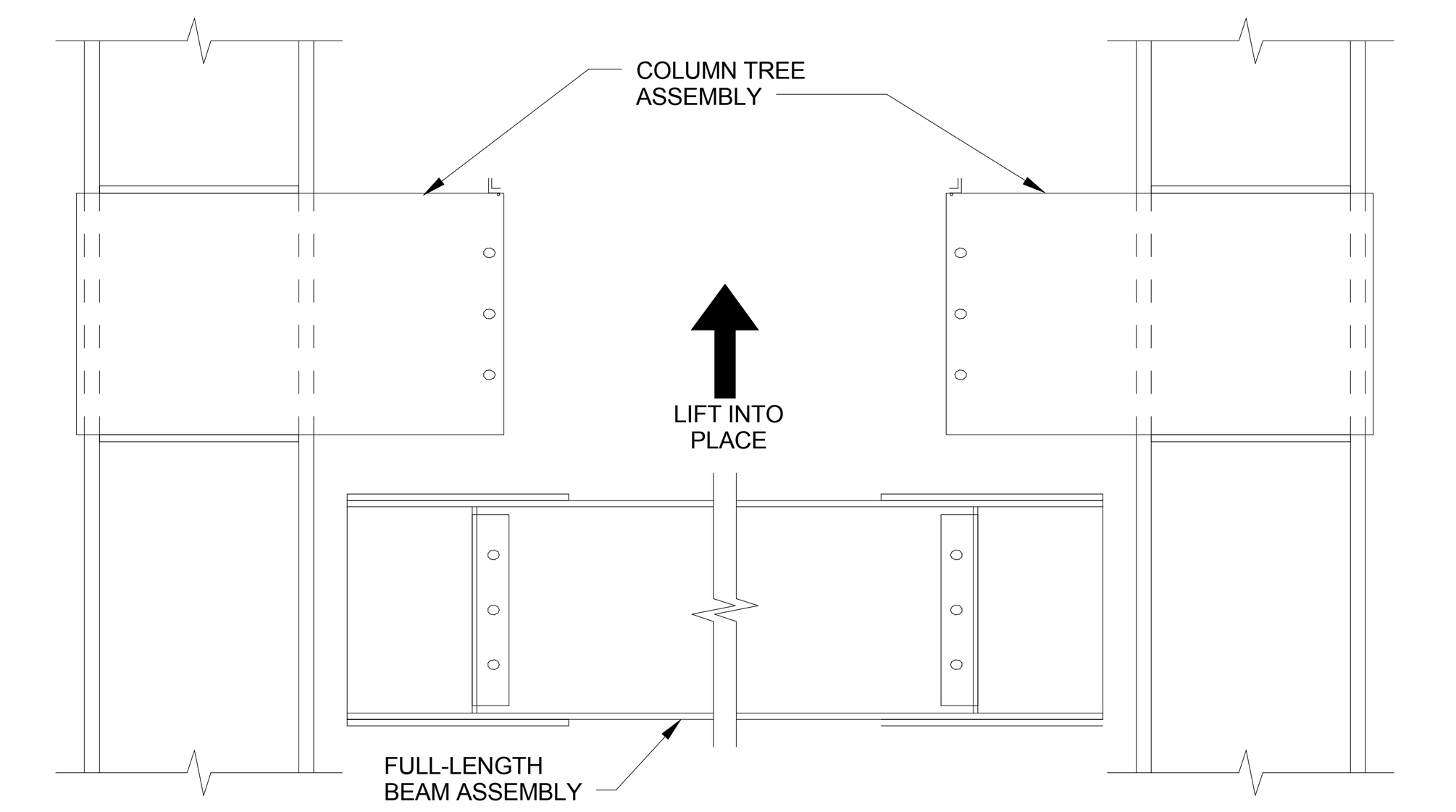


GRAPHIC NO. 2 - WELD END PROFILE & TERMINATION OF FILLET WELD {5}, FURTHEST FROM BEAM END

   d. NON-COMPLIANCE WITH WELD END PROFILES SHALL BE DOCUMENTED AND SUBMITTED TO SIDEPLATE SYSTEMS, INC. VIA THE VA AND/OR A/E FOR REVIEW AND DISPOSITION
   e. THE START, STOP AND APPLICABLE PROFILE OF EACH FILLET WELD END SHALL BE NOTED ON THE SHOP DRAWINGS.

SHOP FABRICATION OF THE SIDEPLATE FRAME® SYSTEM

(THE SIDEPLATE FRAME® SYSTEM CONSISTS OF FIELD LIFTING AND PLACING A FULL-LENGTH BEAM ASSEMBLY BETWEEN SIDE PLATES {A} OF OPPOSING COLUMN TREE ASSEMBLIES).



GRAPHIC NO. 3 SIDEPLATE FRAME® SYSTEM FIELD ERECTION METHOD

1. COLUMN TREE ASSEMBLY FOR UNIAXIAL CONNECTIONS (CONSISTS OF COLUMN SECTION, TOP AND BOTTOM HORIZONTAL SHEAR PLATES {D}, AND SIDE PLATES {A}).
   a. TACK SIDE PLATES {A} AND HORIZONTAL SHEAR PLATES {D} TO THE COLUMN.
      - QC INSPECTION SHALL PROVIDE VERIFICATION THAT ACTUAL COLUMN FLANGE WIDTH IS AT LEAST NOMINAL COLUMN FLANGE WIDTH WHERE THE SIDE PLATES {A} ARE TO BE INSTALLED. IN THE UNLIKELY EVENT ACTUAL COLUMN FLANGE WIDTH IS LESS THAN NOMINAL, BUT WITHIN AISC STANDARD MILL TOLERANCES (-3/16" MAX), CONTACT SIDEPLATE SYSTEMS FOR APPROPRIATE RECOMMENDATIONS.
   b. WELD HORIZONTAL SHEAR PLATES {D} TO COLUMN WEB USING FILLET WELDS {3} ON OUTER FACE OF PLATE. WHEN WELD {3} OCCURS ON THE COLUMN FLANGES, A WELD TIE-IN OF FILLET WELDS {3} SHALL NOT BE ALLOWED ACROSS THE CLIPPED CORNER OF HORIZONTAL SHEAR PLATE {D} AT THE K-LINE AREA. SEE PREPARATION NOTE 4.a.
   c. WELD HORIZONTAL SHEAR PLATES {D} TO SIDE PLATE {A} USING FILLET WELD {1}.
   d. TEMPORARILY MAINTAIN FLARED-OUT SEPARATION OF SIDE PLATES {A}, IN ANTICIPATION OF WELD {2} SHRINKAGE EFFECTS, BY SUITABLE CONSTRUCTION AIDS (SUCH AS ANGLE IRON 'DOGS', PIPES OR STRUTS) AT THE TOP AND BOTTOM OF THE SIDE PLATE {A}. THEY MAY BE CUT TO FIT AND BEAR ON THE INSIDE FACE OF THE SIDE PLATES OR CUT LONG AND TACKED TO THE EDGES OF THE SIDE PLATES. SUCH CONSTRUCTION AIDS ACT AS SPACERS DURING THE WELDING AND SUBSEQUENT COOL DOWN OF FILLET WELDS {2}. SEE GRAPHIC NO. 4.

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

CONSULTANTS:

Landmark Engineering Group, Inc.	Gateway Geotechnical, LLC	SWT Design	Hinman Consulting Engineers, Inc	The Schachinger Group
Civil Engineer	Geotechnical Engineer	Landscape Architect	Physical Security	Elevator
2834 104th Street	17736 Edison Avenue	7722 Big Bend Boulevard	One Bush Street, Suite 510	4255 Stoney Creek Drive
Urbandale, IA 50322	Chesterfield, MO 63005	St. Louis, MO 63119	San Francisco, CA 94104	Fort Collins, CO 80525
515.221.1322	636.532.7747	314.644.5700	415.621.4423	703.608.2263

Revisions: | Date

ARCHITECT/ENGINEERS:

CANNONDESIGN

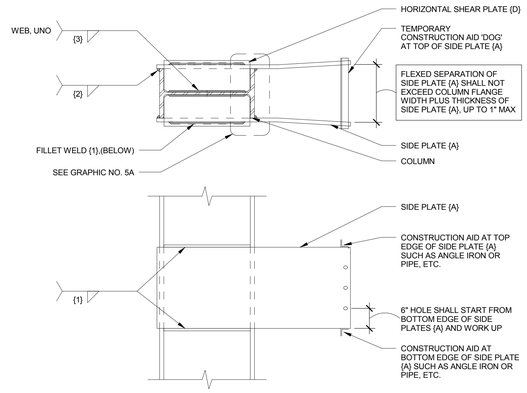
Drawing Title	SSMF GENERAL NOTES (1 OF 2)
Approved: Project Director	
Project Title	John J. Pershing VAMC Clinical & Urgent Care Addition
Location	Poplar Bluff, Missouri
Date	DEC 14, 2015
Checked	MM
Drawn	BL
Project Number	657-351 (CANNON DESIGN PROJECT NO. 03850.05)
Building Number	
Drawing Number	SS-601
Dwg. of	

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

Pages SS-601 through SS-606 depict the construction of SidePlate joints that meet the project's specification for Special Moment Frame (SMF) Performance Criteria. There is a licensing fee associated with this system that is to be paid by the winning steel fabricator and should be included in the steel fabrication bid. Other SMF connections may be possible, provided they meet the performance criteria outlined in the project specification.



GRAPHIC NO. 4 - COLUMN TREE ASSEMBLY READY FOR WELD {2}

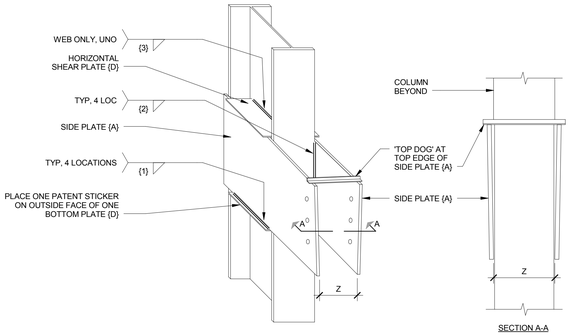
e. WELD INSIDE FACE OF SIDE PLATES {A} TO THE FLANGE TIPS OF COLUMN USING FILLET WELDS {2}. REFER TO GRAPHIC NO 5A FOR CONDITIONS WITH NON-SQUARE COLUMN FLANGE TOES DUE TO MILL ROLLING.

f. AFTER COOL DOWN OF COMPLETED FILLET WELDS {2}, REMOVE ALL CONSTRUCTION AIDS EXCEPT FOR THE ONE AT THE TOP OF SIDE PLATES {A} AND THEN VERIFY DIMENSION 'Z' AT BOTTOM OF SIDE PLATES {A}. DIMENSION 'Z' IS THE REQUIRED CLEARANCE FOR INSERTING THE FULL-LENGTH BEAM ASSEMBLY. REFER TO NOTE 1A BELOW FOR ADDITIONAL DIMENSION 'Z' INFORMATION.

- IF CLEARANCE VERIFICATION IS SUFFICIENT, A SUITABLE ERECTION AID (AKA 'TOP DOG') SHALL BE WELDED TO THE TOP EDGE OF THE SIDE PLATES {A}. IT SHALL BE SUFFICIENTLY STRONG TO REMAIN IN PLACE DURING TRANSPORTATION AND ERECTION OF FULL-LENGTH BEAM (NOTE THIS CONSTRUCTION AID WILL BE UNDER LOAD AND CARE SHALL BE TAKEN WHEN REMOVING).
- IF CLEARANCE VERIFICATION IS NOT SUFFICIENT, FLEX SIDE PLATES {A} BY JACKING THEM APART TO A DIMENSION GREATER THAN THE WIDTH OF COLUMN FLANGE (MAXIMUM SEPARATION SHALL NOT EXCEED WIDTH OF COLUMN FLANGE PLUS THICKNESS OF ONE SIDE PLATE {A} UP TO 1" MAX WITHOUT APPROVAL FROM SIDEPLATE SYSTEMS, INC.) TO COMPENSATE FOR THE SHRINKAGE EFFECT OF FILLET WELDS {2} ON MAINTAINING PARALLEL ALIGNMENT BETWEEN SIDE PLATES {A}. ONCE NECESSARY CLEARANCE HAS BEEN ESTABLISHED, A SUITABLE ERECTION AID (AKA 'TOP DOG') SHALL THEN BE WELDED TO TOP EDGE OF SIDE PLATES {A}. IT SHALL BE SUFFICIENTLY STRONG TO REMAIN IN PLACE DURING TRANSPORTATION AND ERECTION OF FULL-LENGTH BEAM (NOTE THIS CONSTRUCTION AID WILL BE UNDER LOAD AND CARE SHALL BE TAKEN WHEN REMOVING).

1A. THE FOLLOWING FABRICATION AND SEPARATION MEASURES ARE IMPLEMENTED AND MAINTAINED THROUGH DELIVERY TO THE FIELD IN ORDER TO FACILITATE THE LIFTING INTO PLACE OF THE FULL-LENGTH BEAM ASSEMBLY BETWEEN SIDE PLATES {A} OF OPPOSING COLUMN ASSEMBLIES.

a. MAINTAIN SUFFICIENT SEPARATION BETWEEN THE INTERIOR FACES OF SIDES PLATES {A} (DENOTED HEREAFTER AS DIMENSION 'Z' - SEE GRAPHIC NO. 5) TO INSURE SUFFICIENT RATTLE SPACE UPON LIFTING INTO PLACE THE FULL-LENGTH BEAM ASSEMBLY.



SECTION A-A

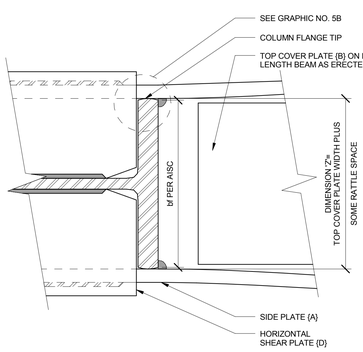
GRAPHIC NO. 5 - COMPLETED SIDEPLATE® FRAME COLUMN TREE ASSEMBLY

b. THE 'Z' DIMENSION SHALL EXTEND AND BE MAINTAINED ANYWHERE IN BETWEEN THE SIDE PLATES FROM TOP TO BOTTOM.

c. THE FABRICATOR MAY PROVIDE A RATTLE SPACE OF APPROXIMATELY 1/4" BETWEEN THE INSIDE FACES OF SIDE PLATES {A} AND THE WIDTH OF THE TOP COVER PLATE {B} OF THE FULL-LENGTH BEAM ASSEMBLY.

d. IN ADDITION TO THE USE OF SEPARATION METHODS PREVIOUSLY IDENTIFIED, THE DETAILED WIDTH OF TOP COVER PLATE {B} CAN BE CORRESPONDINGLY DIMENSIONED TO BE THE COLUMN FLANGE NOMINAL WIDTH OR UP TO 1/8" LESS AT THE FABRICATOR'S DISCRETION. THE REDUCTION IN WIDTH OF THE TOP COVER PLATE {B} SHALL BE BASED ON THE FABRICATOR'S EXPERIENCE WITH THE TYPICAL MILL OVERRUN IN COLUMN FLANGE WIDTH FOR THE COLUMN SECTIONS BEING USED. THE PROPER DETAILED DIMENSIONING OF THE TOP COVER PLATE {B} IS TO FACILITATE ERECTION CLEARANCE DURING THE LIFTING INTO PLACE OF FULL-LENGTH BEAM ASSEMBLY SEE GRAPHIC NO. 5A.

- IT'S IMPORTANT TO MAINTAIN SUFFICIENT EDGE DISTANCE BETWEEN THE LONGITUDINAL EDGE OF COVER PLATE {B} AND THE CORRESPONDING FLANGE TIP OF THE BEAM FOR PLACEMENT OF WELD {5}.
- THE STRUCTURAL STEEL DETAILER SHALL CONSIDER THE SUGGESTED DETAILED WIDTH OF TOP COVER PLATE {B} FOUND IN THE TABLE IN GRAPHIC NO. 5A WHICH IS BASED ON AVERAGES OF MILL TOLERANCE OVERRUNS IN COLUMN FLANGE WIDTHS REPORTED BY EXPERIENCED FABRICATORS.

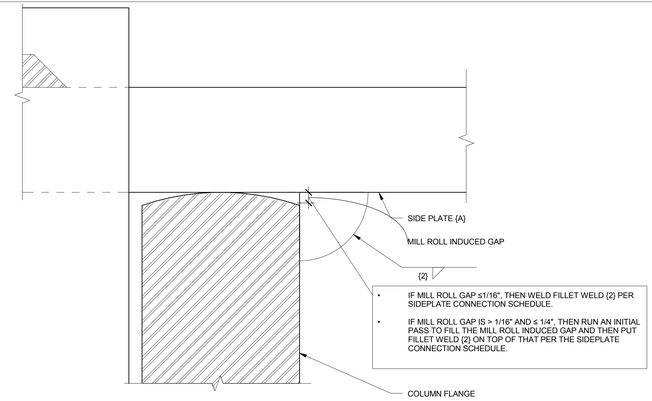


COLUMN FLANGE THICKNESS	REPORTED (1) AVERAGE MILL OVERRUNS	SUGGESTED (1) DETAILED WIDTH OF TOP COVER PLATE {B}	POTENTIAL RATTLE SPACE
< 1 1/2"	0- 3/16"	(NOMINAL COLUMN FLANGE WIDTH)-1/8"	1/8" - 5/16"
≥ 1 1/2"	1/8" - 5/16"	(NOMINAL COLUMN FLANGE WIDTH)-1/16"	3/16" -3/8"

TOP COVER PLATE {B} WIDTH TABLE

(1) SIDEPLATE SYSTEMS, INC. ASSUMES NO RESPONSIBILITY FOR ACTUAL PROJECT SPECIFIC MILL OVER RUNS AND HOW SUCH OVER RUNS MAY AFFECT THE FIT-UP IN THE FIELD. STRUCTURAL STEEL DETAILER AND FABRICATOR SHALL WORK CLOSELY TO DETERMINE THE APPROPRIATE DETAILED WIDTH OF TOP COVER PLATE {B}.

GRAPHIC NO. 5A



GRAPHIC NO.5B

e. QC INSPECTION SHALL PROVIDE A HOLD POINT AFTER PLACEMENT OF WELD {2}, COOLING OF WELD {2} AND REMOVAL OF ALL CONSTRUCTION AIDS EXCEPT FOR 'TOP DOG' TO VERIFY MINIMUM DIMENSION 'Z' ANYWHERE IN BETWEEN THE SIDE PLATES FROM TOP TO BOTTOM, AND TO ASCERTAIN IF REQUIRED RATTLE SPACE SHALL BE PROVIDED BASED ON THE DETAILED WIDTH OF TOP COVER PLATE {B} (SEE GRAPHIC NO. 5).

f. FOR THE PURPOSE OF SETTING TOP OF STEEL OF THE FULL-LENGTH BEAM, THE DIMENSIONING OF ERECTION BOLT HOLES IN SIDE PLATES {A} SHALL START AND BE REFERENCED FROM THE BOTTOM EDGE OF SIDE PLATES {A}.

2. FULL-LENGTH BEAM ASSEMBLY: (CONSISTS OF A FULL-LENGTH BEAM, TOP AND BOTTOM COVER PLATES {B}, AND VERTICAL SHEAR ELEMENT (OPTIONS 1, 2, OR 3) PER GRAPHIC NO. 9

a. PRIOR TO CUTTING COVER PLATES {B}, IT IS HIGHLY RECOMMENDED THAT A SUFFICIENT RANDOM SAMPLING OF ACTUAL COLUMN FLANGE WIDTH DIMENSIONS BE MADE SO THAT THE AS-DETAILED COVER PLATE {B} WIDTH AND RATTLE SPACE CAN BE VERIFIED. IF THERE IS A DISCREPANCY, AN ADJUSTMENT IN THE COVER PLATE {B} WIDTH SHALL BE MADE.

b. AS BEST AS POSSIBLE, BOTTOM COVER PLATE {B} SHALL BE PLACED PERPENDICULAR TO THE WEB OF BEAM, REGARDLESS OF POSSIBLE FLANGE TILT (AS ROLLED BY THE MILL).

c. QC INSPECTION SHALL PROVIDE HOLD POINT FOR VERIFICATION OF PERPENDICULAR ALIGNMENT BETWEEN TOP FACE OF BOTTOM COVER PLATE {B} AND WEB OF FULL-LENGTH BEAM TO MINIMIZE, IF NOT ELIMINATE, ANY POTENTIAL ROOT GAP BETWEEN BOTTOM EDGE OF EACH SIDE PLATE {A} AND TOP FACE OF THE BOTTOM COVER PLATE {B}, WHEN THE FULL-LENGTH BEAM HAS BEEN LIFTED INTO PLACE.

d. CUTTING OF THE 'U'-SHAPED SLOT SHALL BE ACCOMPLISHED BY DRILLING AND SAW CUT OR BY THERMAL CUTTING. PROCESS CAN BE AUTOMATED OR BY HAND. SURFACE OF THE CUT SHALL BE FINISHED PER SECTION 2. AND 3. OF 'PREPARATION'.

e. TACK WELDING THE COVER PLATES {B} IN THE BEAM'S PROTECTED ZONE SHALL NOT BE PERMITTED.

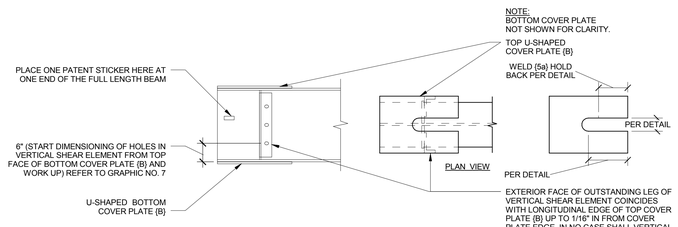
f. WELD BEAM FLANGE COVER PLATES {B} TO BEAM USING FILLET WELDS (5) (SEE GRAPHIC NO.2) AND (5a) (SEE GRAPHIC NO. 1) BEFORE TACK WELDING THE VERTICAL SHEAR ELEMENT (I.E. THIS IS A DISTORTION CONTROL METHOD THAT IS RECOMMENDED, DUE TO THE POTENTIAL WARPING EFFECTS OF WELD {5} ON THE BOTTOM COVER PLATE {B}).

g. FOR THE PURPOSE OF SETTING THE TOP OF STEEL ELEVATION OF THE FULL-LENGTH BEAM, THE DIMENSIONING OF THE BOLT HOLES IN THE OUTSTANDING LEG OF THE VERTICAL SHEAR ELEMENT SHALL START AND BE REFERENCED 6 INCHES FROM THE TOP FACE OF THE BOTTOM COVER PLATE {B} THAT IS WELDED IN PLACE. IF THE BOTTOM COVER PLATE {B} HAS DISTORTION OR A CUPPING UPWARD EFFECT DUE TO WELD {5}, GENERAL AREA HEATING MAY BE APPLIED TO THE BOTTOM COVER PLATE {B} IN ORDER TO REMOVE THE CUPPING UPWARD EFFECT ALONG THE ENTIRE LENGTH OF THE COVER PLATE {B}. ALTERNATELY, THE THICKNESS OF SIDE PLATE {A} SHALL BE CONSIDERED WHEN PLACING THE VERTICAL SHEAR ELEMENT AS TO WHEN THE SIDE PLATE {A} WILL FIRST MAKE CONTACT WITH THE TOP FACE OF BOTTOM COVER PLATE {B}, (SEE GRAPHIC NO. 7).

GRAPHIC NO. 7

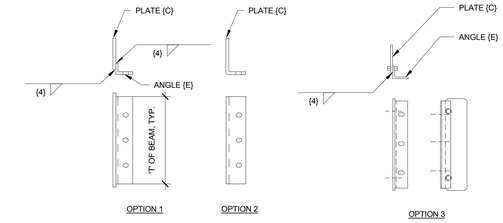
h. THE ENTIRE EXTERIOR FACE OF THE OUTSTANDING LEG OF THE VERTICAL SHEAR ELEMENT SHALL BE PLACED PARALLEL TO THE WEB OF THE FULL-LENGTH BEAM, AND SHALL ALSO DEFINE A VERTICAL PLANE THAT COINCIDES WITH THE LONGITUDINAL EDGE OF TOP COVER PLATE {B} OR A 1/16" IN FROM EDGE.

i. QC INSPECTION SHALL PROVIDE HOLD POINT FOR VERIFICATION OF THE PLACEMENT OF THE VERTICAL SHEAR ELEMENT AND ITS VERTICAL HOLE ALIGNMENTS PER PROVISION OF INSTRUCTION "f)", "g)" AND "h)") ABOVE (SEE GRAPHIC NO. 8).



GRAPHIC NO. 8-TYP END OF COMPLETED SIDEPLATE FULL-LENGTH BEAM ASSEMBLY

j. WELD ONE VERTICAL SHEAR ELEMENT OPTION (1, 2, OR 3) PER GRAPHIC NO. 9 TO BEAM WEB, USING CONTINUOUS FILLET WELDS {4} - EACH SIDE OF BEAM WEB. U.N.O, THE VERTICAL SHEAR ELEMENT SHALL NOT BE WELDED OR TACK WELDED TO BEAM FLANGES FOR OPTION 1, 2 & 3. REFER TO GRAPHIC NO. 9 FOR VERTICAL SHEAR ELEMENT OPTIONS.



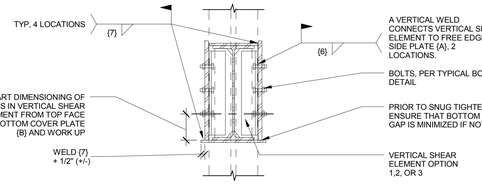
STANDARD

GRAPHIC NO. 9- VERTICAL SHEAR ELEMENT OPTIONS FOR FULL-LENGTH BEAM ASSEMBLY

FIELD ERECTION OF COMPLETED SIDEPLATE FRAME® SYSTEM

(CONSISTS OF JOINING FULL-LENGTH BEAM ASSEMBLY TO COLUMN TREE ASSEMBLIES)

1. INSERT FULL-LENGTH BEAM ASSEMBLY INTO OPPOSING COLUMN ASSEMBLIES WITH UP TO 1/4" RATTLE SPACE.
   a. LIFT FULL-LENGTH BEAM ASSEMBLY UP INTO PLACE (SEE GRAPHIC NO. 3), AND INSERT BOLTS.
      - IN THE EVENT THAT A BEAM IS NOT POSSIBLE TO LIFT INTO PLACE BETWEEN THE SIDE PLATES, CONTACT SIDEPLATE SYSTEMS, INC. IMMEDIATELY FOR REVIEW AND DISPOSITION. SPREADING OF THE SIDE PLATES IN THE FIELD IS NOT ALLOWED WITHOUT PRIOR WRITTEN APPROVAL BY SIDEPLATE SYSTEMS, INC.
   b. CAREFULLY REMOVE TEMPORARY 'TOP DOG' WHICH IS UNDER LOAD. 'TOP DOG' ATTACHMENT WELD MAY REMAIN AND IS NOT NECESSARY TO BE GROUND FLUSH.
   c. INSTALL BOLTS WHICH SERVE AS A CLAMPING DEVICE TO PULL SIDE PLATES {A} IN AS CLOSE AS POSSIBLE TO THE LONGITUDINAL EDGES OF TOP COVER PLATE {B}, THEREBY MINIMIZING ANY, IF NOT ELIMINATING, POSSIBLE ROOT GAP(S). BOLTS SHALL BE SNUG TIGHTENED. SEE GRAPHIC NO. 10. IF THERE ARE ROOT GAPS, ALL EFFORTS SHALL BE MADE TO SPLIT THE DIFFERENCE BETWEEN TOP COVER PLATE {B} AND SIDE PLATES {A}, AS WELL AS BOTTOM OF SIDE PLATE {A} TO TOP FACE OF BOTTOM COVER PLATE {B}.
      - ROOT GAPS GREATER THAN 1/16" AND UP TO 1/4" ARE ACCEPTABLE WITH THE FILLET WELD {7} BEING INCREASED BY THE GAP AMOUNT.
      - ROOT GAPS GREATER THAN 1/4" BUT NOT MORE THAN 3/8" SHALL BE DOCUMENTED. A PQR TYPE TEST PLATE ASSEMBLY SHALL BE REQUIRED. TEST CONFIGURATION AND RESULTS SHALL BE SUBMITTED TO SIDEPLATE SYSTEMS, INC. AND EOR FOR REVIEW AND DISPOSITION. CONTACT SIDEPLATE SYSTEMS, INC FOR MORE INFORMATION.
   d. WELD FILLET WELDS {7}, AND {8} AS OCCURS.



GRAPHIC NO. 10- SECTIONS THROUGH FULL-LENGTH BEAM ASSEMBLY END OF COMPLETED SIDEPLATE FRAME® SYSTEM

2. COLUMN/BEAM SEPARATION (GAP) CLOSURE
   a. PROVIDE A FOLDED STRIP OF LIGHT GAGE METAL, OR SIMILAR, SECURED TO STEEL SURFACES BY DUCT TAPE (OR A TACK WELD LOCATED AS CLOSE AS POSSIBLE TO THE MID SECTION OF BEAM FLANGE COVER PLATE (B)) ACROSS THE PHYSICAL COLUMN/BEAM SEPARATION (GAP) BETWEEN THE TOP BEAM FLANGE COVER PLATE (B) AND THE FACE OF COLUMN FLANGE, TO PREVENT CONCRETE FILL FROM ENTERING THROUGH THE TOP SEPARATION, AND WHEN APPLICABLE, TO PROVIDE SOME BACKING FOR FIREPROOFING ACROSS THE BOTTOM SEPARATION.
   b. IN NO CASE SHALL THE FOLDED STRIP OF LIGHT GAGE METAL BE WELDED TO THE EDGE OF SIDE PLATE {A}, OR TO THE FACE OF COLUMN FLANGE TO ACHIEVE CLOSURE OF THE PHYSICAL COLUMN/BEAM SEPARATIONS.
3. FIREPROOFING
   a. WHEN REQUIRED BY THE GOVERNING CODE FOR CERTAIN TYPES OF CONSTRUCTION, SIDEPLATE® CONNECTIONS SHALL HAVE A FIRE-RESISTANCE RATING LIKE THAT OF A STEEL "STRUCTURAL FRAME".
   b. THE MINIMUM THICKNESS OF SPRAYED ON FIRE-RESISTIVE MATERIAL (SFRM) FOR STEEL SIDEPLATE® CONNECTIONS PLATES, NOT ENCASED IN CONCRETE, SHALL BE DETERMINED JUST LIKE THAT OF A PIPE/TUBE COLUMN SECTION WITH A CONSTANT STEEL WALL THICKNESS USING THE THICKNESS OF SIDE PLATE {A} FOR EACH SIDEPLATE CONNECTION ID PER THE SIDEPLATE CONNECTION SCHEDULE, WHICH ARE UNIFORMLY HEATED AND PROTECTED (THE FIRE EXPOSURE OF A PIPE/TUBE COLUMN IS DIRECTLY ANALOGOUS TO A PLATE WITH A 1-SIDED FIRE EXPOSURE AND PROTECTION). THE SFRM SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ASTM E119 AND LISTED FOR FIRE RESISTIVE PIPE/TUBE COLUMN APPLICATIONS FOR NO LESS THAN THE REQUIRED RATED TIME.
   c. THE CONTRACTOR SHALL PROVIDE THE MEANS (TYPICALLY DONE WITH A LAYERING TECHNIQUE) FOR FIREPROOFING ACROSS THE PHYSICAL COLUMN/BEAM SEPARATION (GAP) BETWEEN THE BOTTOM BEAM FLANGE COVER PLATE {B} AND THE FACE OF THE COLUMN FLANGE. (IF CLOSURE IS REQUIRED FOLLOW GUIDELINES ABOVE IN ITEM 2a & 2b).
4. PROTECTED ZONES
   a. THE CONTRACTOR SHALL IDENTIFY THE PROTECTED ZONES ON BOTH THE BEAM AND THE SIDE PLATES BY USING ANY SUITABLE NON-DESTRUCTIVE MEANS.
   b. ONCE THE STEEL DECKING IS IN PLACE, THE CONTRACTOR SHALL USE ANY SUITABLE NON-DESTRUCTIVE MEANS TO IDENTIFY THE PROTECTED ZONE PRIOR TO THE INSTALLATION OF SHEAR STUDS AND DECK ATTACHMENTS, ETC.
   c. AFTER SPRAYED ON FIRE-RESISTIVE MATERIAL HAS BEEN APPLIED, THE CONTRACTOR SHALL USE ANY SUITABLE NON-DESTRUCTIVE MEANS TO IDENTIFY THE PROTECTED ZONES, FOR OTHER DISCIPLINES TO PRECLUDE WELDED OR SHOT IN ATTACHMENTS, ETC.
   d. NOTE: WELDS {1}, {2}, {5}, {5a} AND {7} ARE ALLOWED IN THE PROTECTED ZONES, AS DETAILED.

v5.3.4

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions:	Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

ARCHITECT/ENGINEERS:

CANNONDESIGN

Drawing Title: **SSMF GENERAL NOTES (2 OF 2)**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **MM** | Drawn: **BL**

Project Number: **657-351** (CANNON DESIGN PROJECT NO. 03850.05)

Building Number

Drawing Number: **SS-602**

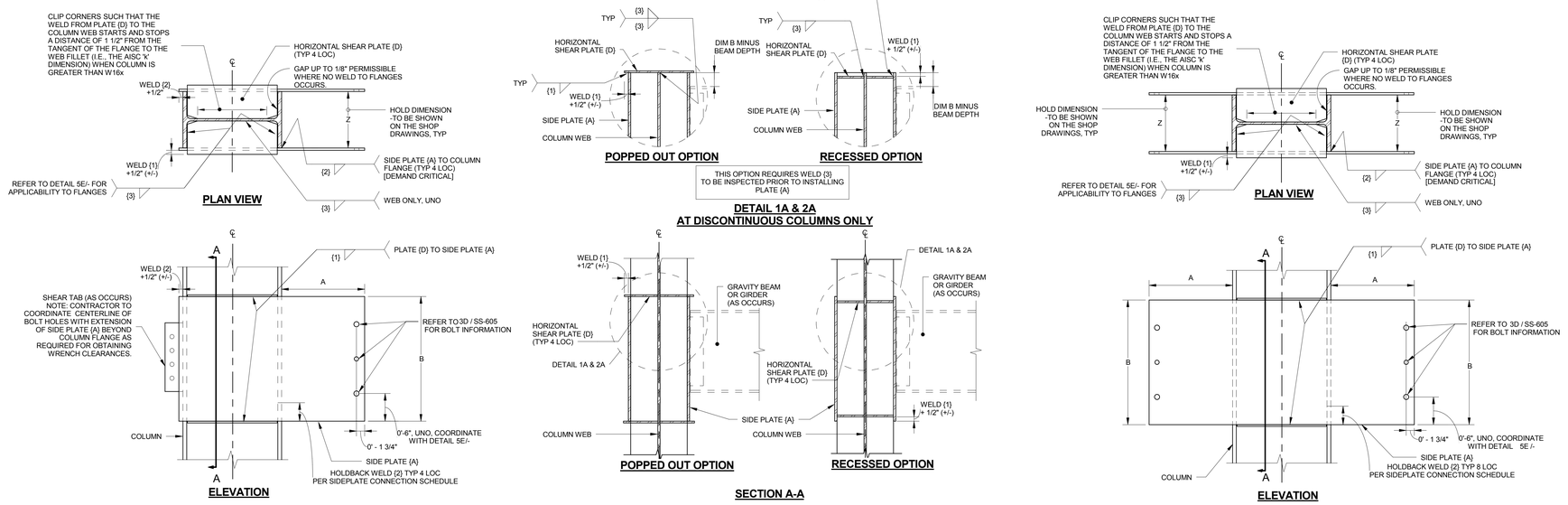
Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

Pages SS-601 through SS-606 depict the construction of SidePlate joints that meet the project's specification for Special Moment Frame (SMF) Performance Criteria. There is a licensing fee associated with this system that is to be paid by the winning steel fabricator and should be included in the steel fabrication bid. Other SMF connections may be possible, provided they meet the performance criteria outlined in the project specification.



ONE-SIDED CONNECTION COLUMN SHOP DETAIL (A-TYPE) 4C

TWO-SIDED CONNECTION COLUMN SHOP DETAIL (B-TYPE) 8C

ID	COLUMN DESIGN								BEAM DESIGN													MISCELLANEOUS			
	COLUMN	PLATE THICKNESS		WELD SIZE				WELD HOLD BACK	BEAM	GAP	DIMENSIONS			PLATE THICKNESS		WELD SIZE					WELD HOLDBACK		COVER PLATE	VERTICAL SHEAR ELEMENT OPTION	ANGLE {E} & GRADE	COORDINATE WITH DETAIL
		{A}	{D}	{1}	{2}	{3} WEB	{3} FLANGE	{2}			A	B	C	{B}	{C}	{4}	{5}	{5a}	{6}	{7}	{5}	{5a}				
A2	W27X	1 7/8	3/8	3/8	11/16	3/8	-	2 3/8	W30X148	4 1/4	30	33	35 1/2	3/4	3/8	5/16	1/2	1/2	5/16	7/8	7 1/4	4 1/2	U-Shaped	1, 2 or 3	L5x3x1/2 (Gr. 50)	-
A2C1	W27X	1 7/8	3/8	7/16	9/16	3/8	3/8	2 1/8	W30X148	3 1/2	28	33	33 1/2	3/4	3/8	5/16	1/2	1/2	5/16	7/8	7	4 1/2	U-Shaped	1, 2 or 3	L5x3x1/2 (Gr. 50)	9B/SS-606
A2C2	W27X	1 5/8	3/8	7/16	9/16	7/16	7/16	2 1/8	W30X148	3 1/2	28	33	33 1/2	3/4	3/8	5/16	1/2	1/2	5/16	7/8	7	4 1/2	U-Shaped	1, 2 or 3	L5x3x1/2 (Gr. 50)	9E/SS-606
B1	W27X	1	3/8	1/2	7/8	1/2	-	1 1/2	W27X94	2 1/4	23	30	29	1/2	3/8	5/16	3/8	3/8	5/16	5/8	6 1/4	4	U-Shaped	1, 2 or 3	L5x3x1/2 (Gr. 50)	-
B2	W27X	1 7/8	1/2	1/2	1 1/8	1/2	-	2 3/8	W30X148	4 1/4	30	33	36	3/4	3/8	5/16	1/2	1/2	5/16	7/8	7 1/4	4 1/2	U-Shaped	1, 2 or 3	L5x3x1/2 (Gr. 50)	-
B2C1	W27X	2	1/2	9/16	15/16	1/2	1/2	2 1/8	W30X148	3 1/2	28	33	34	3/4	3/8	5/16	1/2	1/2	5/16	7/8	7 1/4	4 1/2	U-Shaped	1, 2 or 3	L5x3x1/2 (Gr. 50)	9B/SS-606

SIDEPLATE A&B-TYPE CONNECTION SCHEDULE 5E

NOTE: USE THIS SCHEDULE WITH DETAILS 4C & 8C /SS-603
REFER TO FULL-LENGTH BEAM DETAIL 4B & 8B ON SHEETSS-605

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions: | Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

ARCHITECT/ENGINEERS:

CANNONDESIGN

Drawing Title: **SSMF A TYPE & B TYPE TYPICAL DETAILS**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **MM** | Drawn: **BL**

Project Number: **657-351** (CANNON DESIGN PROJECT NO. 03850.05)

Building Number

Drawing Number: **SS-603**

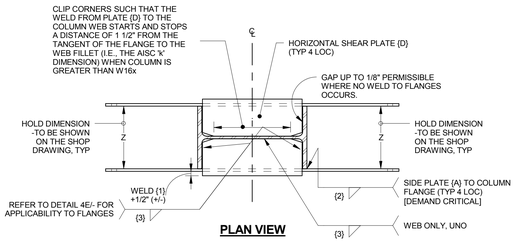
Dwg. of

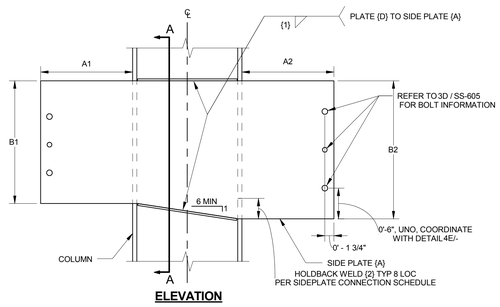
Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

Pages SS-601 through SS-606 depict the construction of SidePlate joints that meet the project's specification for Special Moment Frame (SMF) Performance Criteria. There is a licensing fee associated with this system that is to be paid by the winning steel fabricator and should be included in the steel fabrication bid. Other SMF connections may be possible, provided they meet the performance criteria outlined in the project specification.

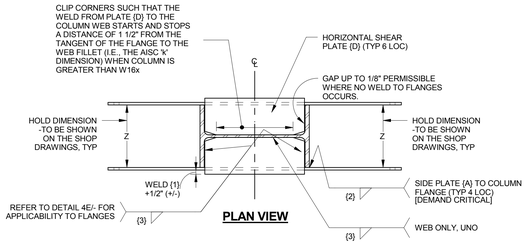


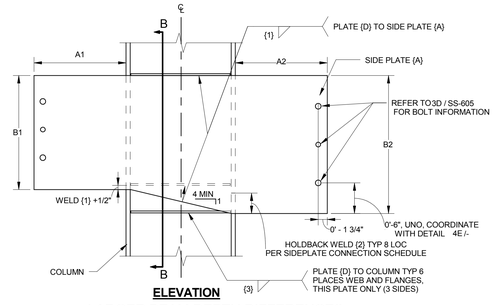


SUBTLE BEAM DEPTH DIFFERENCES

(MAX SIDE PLATE {A} SLOPE 1:6)

TWO-SIDED CONNECTION COLUMN SHOP DETAIL (C-TYPE) 2C

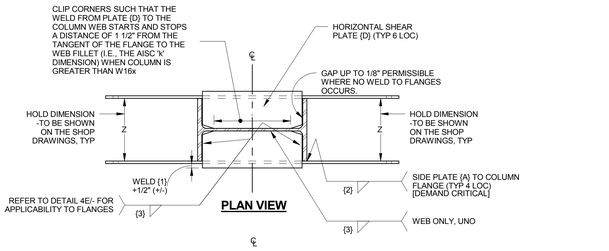


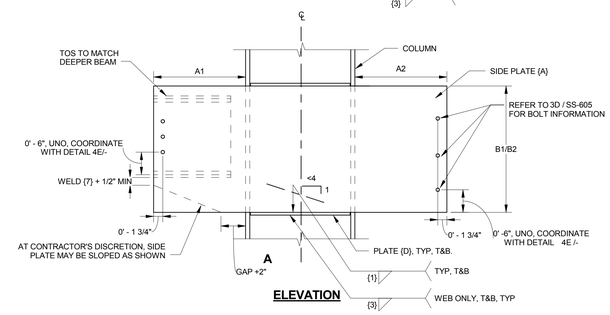


LARGER BEAM DEPTH DIFFERENCES

(MAX SIDE PLATE {A} SLOPE 1:4 WITHOUT SIDEPLATE APPROVAL)

TWO SIDED CONNECTION COLUMN SHOP DETAIL (C-TYPE) 5C

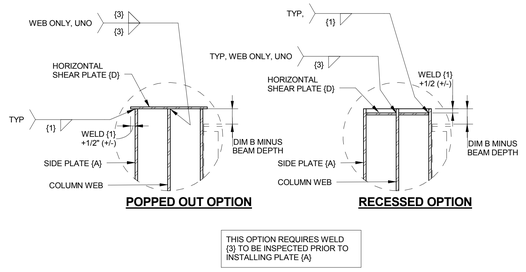




STEEP BEAM DEPTH DIFFERENCES

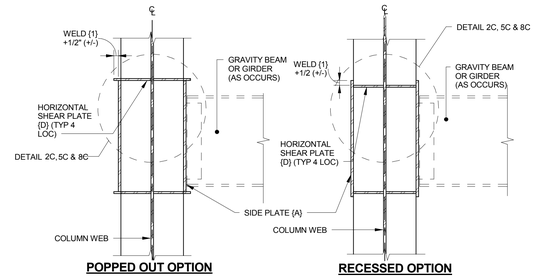
(ONLY TO BE USED WHEN SIDE PLATE {A} SLOPE IS STEEPER THAN 1:4 AS SHOWN IN DETAIL 5C)

TWO-SIDED CONNECTION COLUMN SHOP DETAIL WITH FIELD OVERHEAD WELDING (C-TYPE) 8C

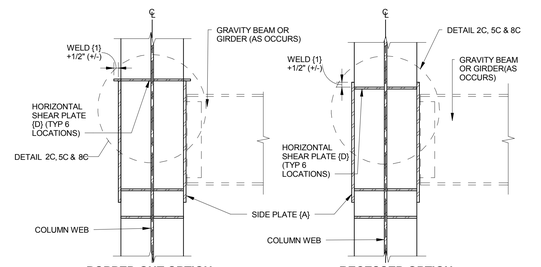


THIS OPTION REQUIRES WELD {3} TO BE INSPECTED PRIOR TO INSTALLING PLATE {A}

DETAIL 2C, 5C & 8C AT DISCONTINUOUS COLUMNS ONLY



SECTION A-A



SECTION B-B

ID	COLUMN	COLUMN DESIGN: PLATE THICKNESS {A}	PLATE THICKNESS {D}	WELD SIZE {1}	WELD SIZE {2}	WELD SIZE {3} WEB	WELD SIZE {3} FLANGE	WELD HOLDBACK {2}	BEAM	GAP	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C	BEAM DESIGN: PLATE THICKNESS {B}	PLATE THICKNESS {C}	WELD SIZE {4}	WELD SIZE {5}	WELD SIZE {5a}	WELD SIZE {6}	WELD SIZE {7}	WELD HOLDBACK {5}	WELD HOLDBACK {5a}	MISCELLANEOUS: COVER PLATE	VERTICAL SHEAR ELEMENT OPTION / VERTICAL SHEAR ELEMENT OPTION 2	ANGLE {E} & GRADE	COORDINATE WITH DETAIL
C1	W27X	1 5/8	1/2	1/2	1 1/16	1/2	-	2 1/8	W24X94	3	21	26 5/8	25	3/4	3/8	5/16	7/16	7/16	5/16	7/8	5	3 1/2	U-Shaped	1, 2 or 3	L5x3x1/2 (Gr. 50)	-
									W30X148	3 1/2	28	33	33 1/2	3/4	3/8	5/16	1/2	1/2	5/16	7/8	7	4 1/2		1, 2 or 3	L5x3x1/2 (Gr. 50)	

SIDEPLATE C-TYPE CONNECTION SCHEDULE 4E

NOTE: USE THIS SCHEDULE WITH DETAILS 2C, 5C& 8C/SS-604
REFER TO FULL-LENGTH BEAM DETAIL 4B &8B ON SHEET SS-605

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions:	Date

CONSULTANTS:

Landmark Engineering Group, Inc. — Civil Engineer, 2834 104th Street, Urbandale, IA 50322, 515.221.1322
Gateway Geotechnical, LLC — Geotechnical Engineer, 17736 Edison Avenue, Chesterfield, MO 63005, 636.532.7747
SWT Design — Landscape Architect, 7722 Big Bend Boulevard, St. Louis, MO 63119, 314.644.5700
Hinman Consulting Engineers, Inc — Physical Security, One Bush Street, Suite 510, San Francisco, CA 94104, 415.621.4423
The Schachinger Group — Elevator, 4255 Stoney Creek Drive, Fort Collins, CO 80525, 703.608.2263

ARCHITECT/ENGINEERS:

CANNONDESIGN

Drawing Title: **SSMF C TYPE TYPICAL DETAILS**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **MM** | Drawn: **BL**

Project Number: **657-351** (CANNON DESIGN PROJECT NO. 03850.05)

Building Number

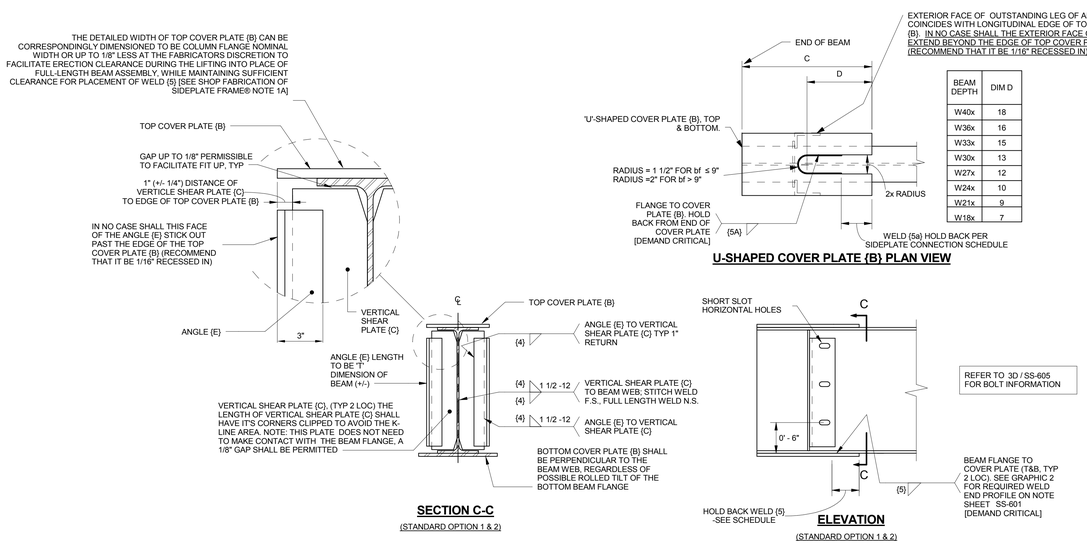
Drawing Number: **SS-604** Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

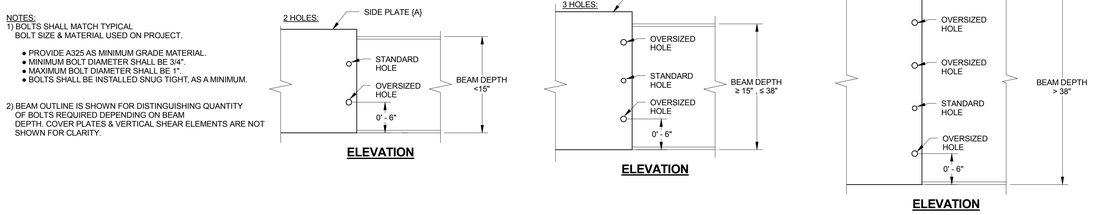
VA FORM 08-6231

Pages SS-601 through SS-606 depict the construction of SidePlate joints that meet the project's specification for Special Moment Frame (SMF) Performance Criteria. There is a licensing fee associated with this system that is to be paid by the winning steel fabricator and should be included in the steel fabrication bid. Other SMF connections may be possible, provided they meet the performance criteria outlined in the project specification.

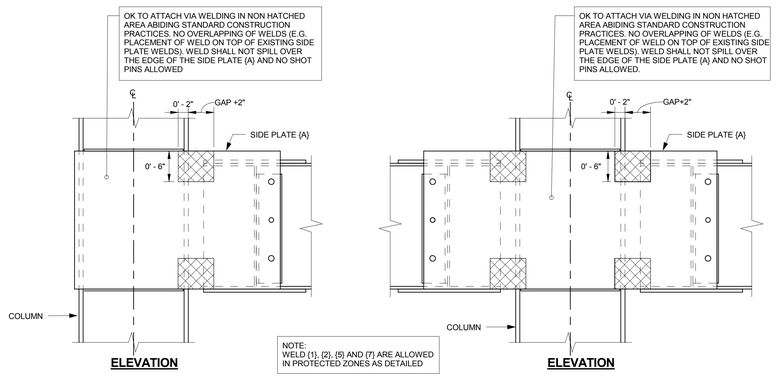


FULL LENGTH BEAM SHOP DETAIL 4B

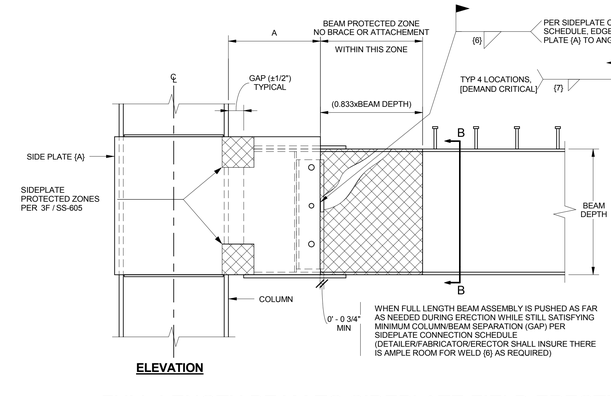
NOTE: REFER TO SIDEPLATE CONNECTION SCHEDULE DETAILS 5E/SS-603 & 4E/SS-604



BOLT AND BOLT HOLE DETAIL AT SIDE PLATES A 3D



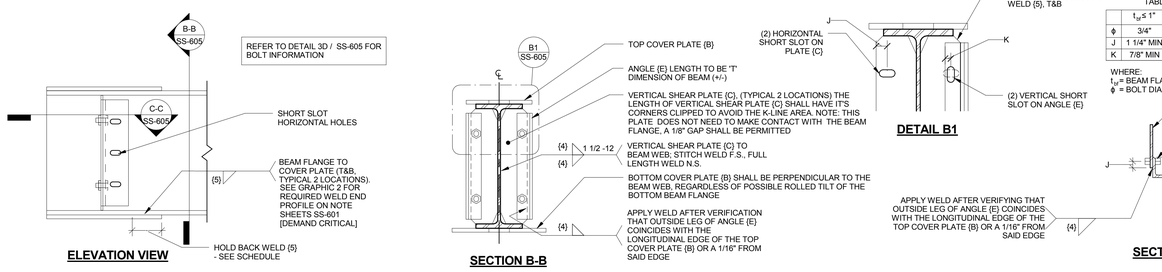
SIDE PLATE {A} PROTECTED ZONES 3F



FULL-LENGTH BEAM TO SIDEPLATE FIELD ERECTION DETAIL 8B

NOTE: REFER TO SIDE PLATE CONNECTION SCHEDULE DETAIL 5E/SS-603 & 4E/SS-604

DECK SUPPORT ANGLE TO SIDE PLATE CONNECTION 8D



FULL LENGTH BEAM SHOP DETAIL OPTION 3 8F

NOTE: REFER TO SIDEPLATE CONNECTION SCHEDULE DETAIL 5E/SS603 & 4E/SS-604

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions:	Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

ARCHITECT/ENGINEERS:

CANNONDESIGN

Drawing Title: **SSMF TYPICAL BEAM DETAILS**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **MM** | Drawn: **BL**

Project Number: **657-351** (CANNON DESIGN PROJECT NO. 03850.05)

Building Number

Drawing Number: **SS-605**

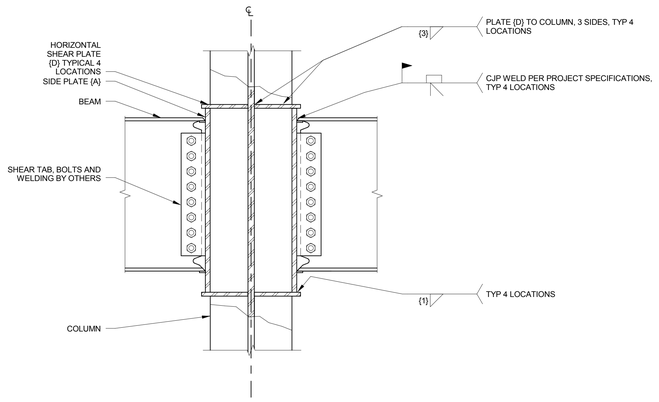
Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

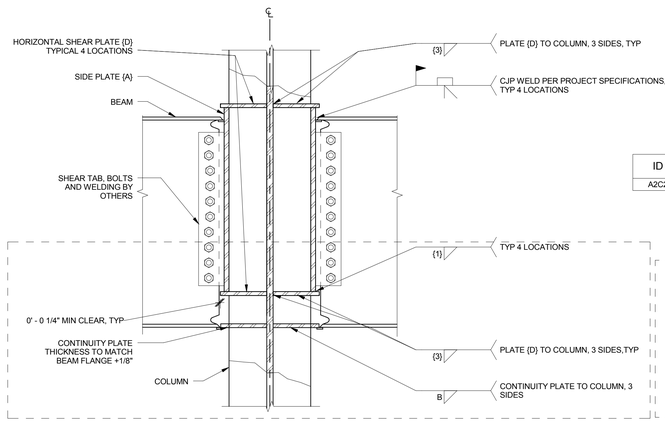
Pages SS-601 through SS-606 depict the construction of SidePlate joints that meet the project's specification for Special Moment Frame (SMF) Performance Criteria. There is a licensing fee associated with this system that is to be paid by the winning steel fabricator and should be included in the steel fabrication bid. Other SMF connections may be possible, provided they meet the performance criteria outlined in the project specification.



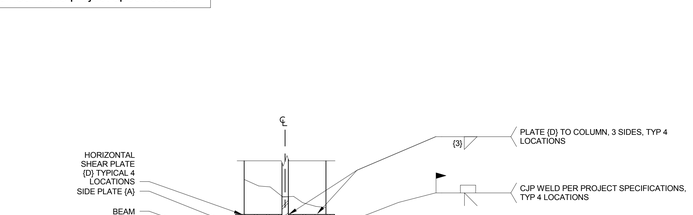
NOTES:
1. REFER TO SIDEPLATE CONNECTION SCHEDULE FOR SIDEPLATE PROPERTIES NOT SPECIFIED HERE.
2. USE THIS DETAIL WHEN CANTILEVER BEAM IS SHALLOWER THAN THE SIDEPLATE MOMENT FRAME BEAM.
3. ALL PLATES SHAL BE A572 GR50 UNO.

SHALLOW CANTILEVER CONNECTION

9B



ID	WELD A	WELD B	DIM X
A2C2	5/16	5/16	12



ALTERNATE BOTTOM FLANGE CONNECTION

NOTES:
1. REFER TO SIDEPLATE CONNECTION SCHEDULE FOR SIDEPLATE PROPERTIES NOT SPECIFIED HERE.
2. USE THIS DETAIL WHEN PERPENDICULAR BEAM IS DEEPER THAN THE SIDEPLATE MOMENT FRAME BEAM.
3. AT CONTRACTOR'S OPTION, BOTTOM HORIZONTAL SHEAR PLATE (D) MAY BE RECESSED.
4. ALL PLATES SHALL BE A572 GR50 UNO.

DEEP CANTILEVER CONNECTION

9E

CONSTRUCTION DOCUMENTS - FINAL BID DOCUMENTS

Revisions:	Date

CONSULTANTS:

Landmark Engineering Group, Inc.
Civil Engineer
2834 104th Street
Urbandale, IA 50322
515.221.1322

Gateway Geotechnical, LLC
Geotechnical Engineer
17736 Edison Avenue
Chesterfield, MO 63005
636.532.7747

SWT Design
Landscape Architect
7722 Big Bend Boulevard
St. Louis, MO 63119
314.644.5700

Hinman Consulting Engineers, Inc
Physical Security
One Bush Street, Suite 510
San Francisco, CA 94104
415.621.4423

The Schachinger Group
Elevator
4255 Stoney Creek Drive
Fort Collins, CO 80525
703.608.2263

ARCHITECT/ENGINEERS:

CANNONDESIGN

Drawing Title: **SSMF MISC DETAILS**

Approved: Project Director

Project Title: **John J. Pershing VAMC Clinical & Urgent Care Addition**

Location: **Poplar Bluff, Missouri**

Date: **DEC 14, 2015** | Checked: **MM** | Drawn: **BL**

Project Number: **657-351** (CANNON DESIGN PROJECT NO. 03850.05)

Building Number

Drawing Number: **SS-606**

Dwg. of

Office of Construction and Facilities Management

Department of Veterans Affairs

VA FORM 08-6231